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Tongass  
National  
Forest  
R10-MB-374c

October 1999



# Indian River Timber Sales

## Final Environmental Impact Statement

### Summary and Record of Decision



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Date: September 29, 1999

Dear Reader:

Attached is the Record of Decision (ROD) for the Indian River Timber Sale(s) Project. If you requested complete documentation of this decision, the following items should be found in the package:

1. Final Environmental Impact Statement (Volume I)
2. Final EIS Appendices A - O (Volume II)
3. Record of Decision, Summary, and Selected Alternative Map (Volume III)
4. Alternative Map Pack (six large scale maps)

If you elected to receive the summary set of documents, the package should include only Volume III and the Alternative Map Pack. Copies of the entire Final EIS are available for review at Forest Service offices in Sitka, Juneau, and Hoonah. Copies have also been sent to the library in Tenakee Springs and other libraries throughout Southeast Alaska.

The ROD documents my final decision on the selection of an alternative, and the factors considered in reaching the decision. The effective date of implementation for the decision and the Notice of Rights of Appeal are also specified in the ROD.

I want to thank those of you who took the time to review and comment on the Draft Environmental Impact Statement and also those who participated in the Subsistence Hearing. Your interest in the management of the Tongass National Forest is appreciated.

Sincerely,

FRED S. SALINAS  
Assistant Forest Supervisor





# Summary





# Summary

## Project Overview

In compliance with Federal regulations, the Forest Service has prepared this Environmental Impact Statement (EIS) for proposed timber harvest and related activities in the Indian River Project Area (See Figure S-1 for Project Area location).

This EIS follows the format established in the Council on Environmental Quality (CEQ) regulations (40 CFR 1500-1508). It discloses the physical, biological, economic, and social consequences of five harvest alternatives and a no-action alternative.

## Purpose and Need

The Indian River Timber Sale(s) Project is proposed at this time to respond to the goals and objectives identified for the Project Area by the modified 1997 Tongass Land and Resource Management Plan (TLRMP, also referred to as the modified 1997 Forest Plan), and to move the Project Area toward the desired condition described in TLRMP.

The modified 1997 Forest Plan identified the following Forest-wide goals and objectives (TLRMP 1997 [modified 1999], pp. 2-3 to 2-4):

- 1) improve timber growth and productivity on suitable timber lands made available for timber harvest, and manage these lands for a long-term sustained yield of timber;
- 2) contribute to a timber supply from the Tongass National Forest that seeks to meet annual and TLRMP planning cycle market demand; and
- 3) provide opportunities for local employment in the wood products industry, which in turn contribute to the local and regional economies of Southeast Alaska.

The Forest Plan also identified a desired condition for lands on which timber harvest is allowed, which includes managing suitable timber lands for the production of sawtimber and other wood products and allowing a variety of successional stages that provide a range of wildlife habitat conditions (TLRMP1997 [modified 1999], pp. 3-135 to 3-136, and 3-144).

As stated above, the Indian River Timber Sale(s) Project responds to the TLRMP goals and objectives, as well as the desired condition for the Project Area.

### Timber Growth and Productivity

Losses to the timber resource caused by age decay and disease are considerable in old-growth forests. It is not uncommon for over 30 percent of the timber volume in old-growth stands to be defective and thus unusable for wood products. Tree vigor tends to decrease with maturity, causing an increase in susceptibility to disease and decay fungi. Disease and decay processes are a natural part of forest ecosystems, and play a key role in providing wildlife habitat in old-growth forests. Harvesting aging stands, including those in declining health, on lands that allow timber harvest and replacing them with faster growing, healthy stands will reduce the volume loss associated with decay and disease and increase the growth and yield of the managed forest land.

The modified 1997 Forest Plan allocated approximately 72.2 percent of the land within the Indian River Timber Sale(s) Project Area to the Timber Production Land Use Designation (LUD). The desired condition for these lands, as identified by the modified Forest Plan, states

that they are to be managed for the production of sawtimber and other wood products on an even-flow, long-term sustained yield basis (TLRMP [modified 1999], p. 3-144). An additional 0.1 percent of the land within the Indian River Timber Sale(s) Project Area is allocated to the Modified Landscape LUD. The desired condition for these lands states that they will produce a yield of timber that contributes to the Forest-wide sustained yield (TLRMP 1997 [modified 1999], p. 3-135).

The remaining 27.7 percent of the Project Area is allocated to the Old-growth Habitat LUD. The desired condition for these lands states that all forested areas in this LUD will have attained old-growth forest characteristics, providing a diversity of old-growth habitat types and associated species and subspecies and ecological processes. Timber volume from this LUD (such as salvage) does not contribute to the Forest-wide allowable sale quantity.

Western hemlock currently makes up about 83 percent of the old-growth forests in the Project Area. This species is susceptible to dwarf mistletoe, a disease that does not infect Alaska yellow-cedar and rarely infects Sitka spruce. Western hemlock also appears to have more insect enemies than Sitka spruce. In addition, it has the lowest economic value of the three major commercial tree species in the Project Area. Harvesting existing stands dominated by western hemlock can encourage the growth of Sitka spruce and yellow-cedar, creating a more diverse species mix and minimizing losses due to insects and diseases that are species-specific. Using clearcut harvest methods and cable yarding systems will more likely provide favorable conditions for spruce and cedar regeneration, as compared to harvest methods that use helicopters for yarding.

## Market Demand

Section 101 of the Tongass Timber Reform Act (TTRA) directs the Forest Service to “seek to provide a supply of timber from the Tongass National Forest which (1) meets the annual market demand for timber from such forest and (2) meets the market demand from such forest for each planning cycle,” to the extent consistent with the multiple use and sustained yield of all renewable forest resources. Market demand for Tongass timber is derived from factors including Southeast Alaska’s timber industry mill capacity; local, national, and international timber markets; and projected local, national, and worldwide timber supplies.

The Alaska Region uses the projections of Regional Economist Kathleen Morse to help determine demand for Tongass timber. In addition, the latest Pacific Northwest Research (PNW) Station was also consulted (Brooks and Haynes 1997). The latest market demand estimates for Tongass timber through the year 2007 are based on three projections, or scenarios, of demand (low, medium, and high). Average annual demand over the 1998 to 2007 time frame is estimated to be 112.8 mmbf under the low scenario, 132.6 mmbf under the medium scenario, and 182.2 mmbf under the high scenario (USDA 1999). The timber demand study also evaluated the range of expected timber purchases for FY 1999. According to the study, expected purchases in a low market scenario would range from 86 mmbf to 136 mmbf. In a medium market scenario, the range would be 99 mmbf to 188 mmbf. The high market scenario (which is unlikely to occur) range would be 128 mmbf to 256 mmbf (USDA 1999).

The Forest Service intent is to provide the opportunity for the timber industry as a whole to acquire a supply of purchased, but unharvested timber equal to about three years of timber consumption, considering the average annual demand generated in the timber demand study. This supply is a means of providing for stability in relation to fluctuating market demand. It is estimated that a three-year supply of timber, based on medium demand projections, is 399 mmbf. As of April 30, 1999, there were 372 mmbf of unharvested timber volume under contract to the timber industry (Automated Timber Sales Accounting System Report 907-01, April 30, 1999). Thus, in order to meet the intent of having a three-year supply, approximately 27 mmbf of timber volume needs to be cleared through the NEPA process and offered to prospective bidders. The Tongass National Forest also has a goal of offering approximately 153 mmbf annually to prospective bidders (Appendix A). Appendix A

displays the timber sale schedule which is capable of supplying these timber volumes. Timber volume from the Indian River timber Sale(s) Project will contribute toward meeting this goal

Appendix A of the EIS provides a detailed rationale for why the Indian River Timber Sale(s) Project Area was selected for analysis at this time. The appendix states that the Indian River Timber Sale(s) Project Area was selected because:

- The modified 1997 Forest Plan allocated over 72 percent of the area as a Timber Production Land Use Designation (LUD), with sufficient timber volume available to help meet market demand;
- Timber management activities will contribute to meeting the goals, objectives, and desired condition for this LUD;
- Most of the other timber Production LUDs on the Forest have or are planning to have timber management activities scheduled in them;
- Timber harvest infrastructure (roads, log transfer site, rock quarries) are in place or in need of maintenance to reduce potential resource damage and to continue timber harvest offerings;
- This project is consistent and meets Forest Service policy in the Alaska Region, the Regional Guide, the modified 1997 Forest Plan, and all other laws and regulations governing the harvest of timber from National Forest System lands.
- To provide local employment opportunities in the wood products industry, consistent with providing for the multiple use and sustained yield of all renewable forest resources.

## Local Employment Opportunities

Timber is one of several valuable resources on the Tongass and many people depend on it for their livelihood. Timber from the Tongass is harvested for sawn wood products such as lumber and cants and wood chip exports, and is the basis for a major industry in Southeast Alaska that provided about 1,749 direct jobs in Fiscal Year 1996 (Alaska Department of Labor, May 1997).

The Tongass timber program is part of a long-term cooperative effort among the Federal government, the State of Alaska, and local governments to provide greater economic diversity and stability in Southeast Alaska and more year-round employment. The Indian River Timber Sale(s) Project would contribute toward this effort, providing the opportunity for approximately 49 average annual jobs and \$2.1 million in associated average annual income. This equates to 8.24 jobs and \$350,000 in associated income per million board feet harvested (Forest Service IMPLAN model - base year 1992).

## Decision to be Made and Responsible Official

The Council on Environmental Quality (CEQ) regulations for implementing the National Environmental Policy Act (NEPA) state that an EIS "...should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision-maker..." This EIS, in accordance with CEQ regulations, is not a decision document in itself, but is written to provide sufficient information for the decision-maker.

The Assistant Area Forest Supervisor is the responsible official for this Project. He must decide whether to make timber available from the Indian River Project Area. Furthermore, if he selects an alternative that proposes timber harvest, he must decide:

- the volume of timber to make available in this area in one or more timber sales;
- the location of timber harvest units, road systems, and log transfer facilities (LTFs);
- mitigation measures and enhancement opportunities for sound resource management;
- whether there may be a significant restriction on subsistence uses.



# Summary

The decision is documented in the Indian River Final EIS Record of Decision (ROD).

## Project Location

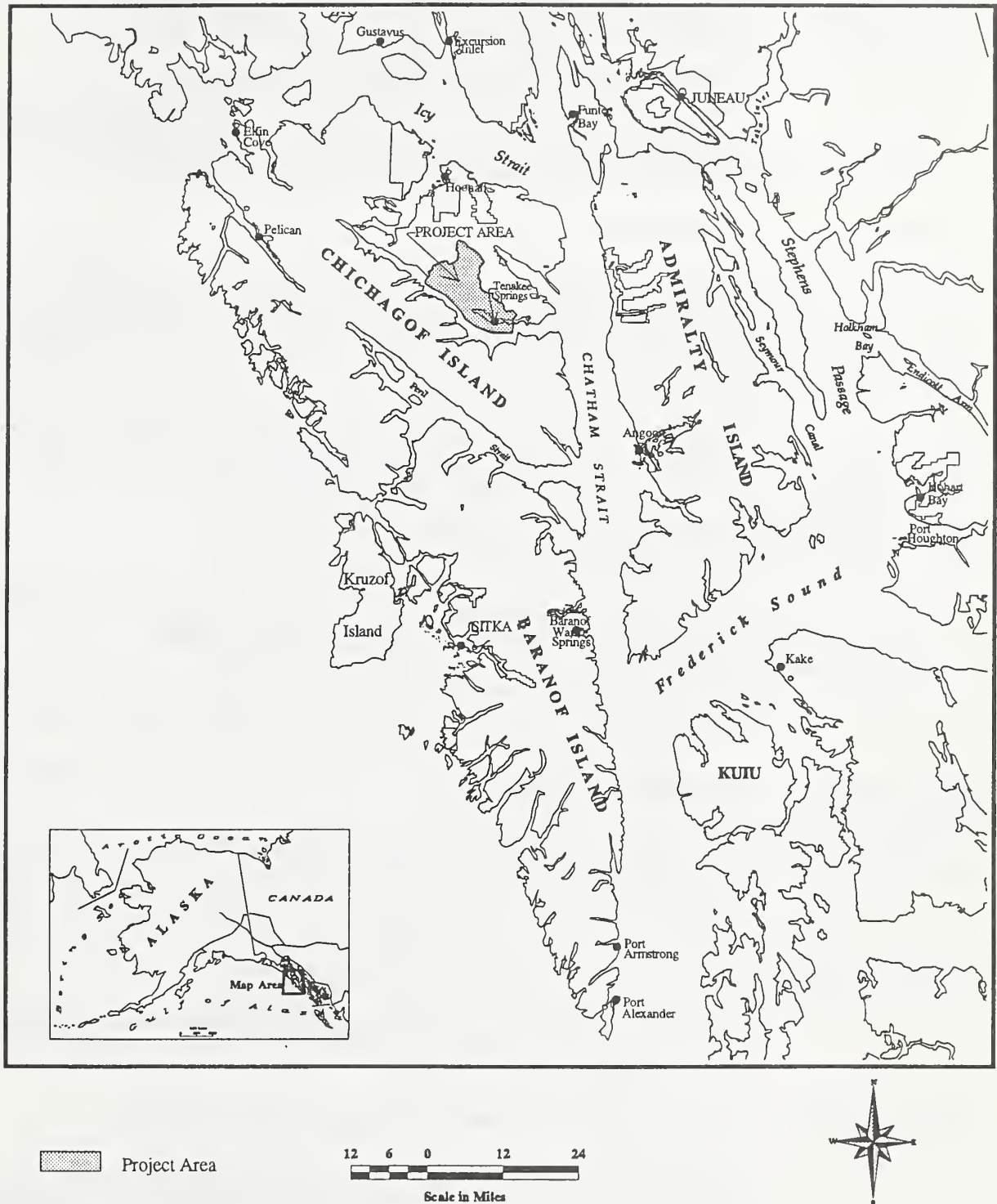
The Indian River Project Area is located in the Tongass National Forest, and is situated on the northern shore of Tenakee Inlet, on Chichagof Island (Figure S-1). The Project Area includes the major watersheds of 10-Mile Creek, Indian River, and portions of the Freshwater Creek and Game Creek drainages. The City of Tenakee Springs lies within the Project Area.

## Proposed Action

The proposed action would harvest up to approximately 23.6 million board feet (mmbf) of timber from 1,821 acres within the Indian River Project Area on northeast Chichagof Island. This timber would be made available through two or more independent sales. Independent timber sale scheduling and volume of timber put up for bid will depend on current demand and economic conditions. As many as eight miles of new road would be built to facilitate timber removal. One previously existing log transfer facility (LTF) site at Sunny Cove and one new site near 10-Mile Creek would be used to implement timber harvest.

Figure S-1 Vicinity Map

## Vicinity Map



## Issues To Be Addressed

The National Environmental Policy Act (NEPA) requires Federal agencies to determine the scope of issues to be addressed and to identify significant issues related to the proposed action. For the Indian River Project, these issues were identified through the scoping process described in Chapter 1 of the EIS. Issues were raised by individuals; organizations; other Federal, State, and local agencies; and affected Indian tribes.

Issues identified during scoping were analyzed and similar issues grouped when appropriate. The following issues were determined to be significant and within the scope of the project. In formulating alternatives, each of the issues was considered and addressed in some manner in all alternatives. Other issues were considered but eliminated from detailed study because resolution falls outside the scope of this project.

### **Issue Area 1      Subsistence**

The focus of this issue is the impact of the proposed action on the availability of wildlife, marine life, and plants for customary and traditional use by rural Alaska residents. The Alaska National Interest Lands Conservation Act (ANILCA) specifically requires the Forest Service to determine if proposed activities may significantly restrict subsistence use.

The units of measure that will be analyzed for effects regarding this issue include the abundance and distribution of subsistence resources (such as habitat capability of deer), competition from other resource users by community, and the ability and methods of subsistence resource users to access the Project Area.

### **Issue Area 2      Fish Habitat and Water Quality**

Fish and water resources in Southeast Alaska are important for subsistence, recreation, ecological, and economic reasons. The focus of this issue is the impact of timber harvest and associated road construction on water quality and fish habitat.

The units of measure that will be analyzed for effects regarding this issue include changes in sedimentation levels, chemical water quality, stream water temperatures, and stream flows, total road miles in stream buffers and number of stream crossings.

### **Issue Area 3      Biodiversity and Wildlife**

The Project Area supports a wide variety of wildlife and plant species. Sitka black-tailed deer populations are of particular concern. Logging may reduce important winter habitat for deer and may contribute to reduced deer populations in some areas over the long term. Changes in other habitats and populations of other wildlife species may also occur. The focus of this issue is the impact of timber management activities on biodiversity levels, wildlife populations and overall management of ecosystems.

The units of measure that will be analyzed for effects regarding this issue include acres of wildlife habitat and habitat capability (for deer), acres of old-growth, number and size of old-growth patches, and acres of wetland.

### **Issue Area 4      Log Transfer Facilities (LTFs) and Camp Location**

There is public concern about the location of LTFs and logging camps, and the potential environmental effects associated with their construction and operation. The focus of this issue is the impact of constructing and operating LTFs at Sunshine Cove and 10-Mile Creek and logging camp locations.

The units of measure that will be analyzed for effects regarding this issue include the number and location of LTFs and logging camps.

## Issue Area 5

### Economic Values

Some communities in Southeast Alaska depend on timber and other natural resources from the Tongass National Forest to support their economy and lifestyles. This issue focuses on the capability of the Project Area to provide a long-term sustained flow of timber and other resources, and on whether this associated level of outputs is sufficient to meet the needs of dependent local communities.

The units of measure that will be analyzed for effects regarding this issue include the annual number of direct and indirect job opportunities created and estimated annual average wages.

## Issue Area 6

### Social Values

The focus of this issue is the impact of timber management activities on the social values of local communities, especially Tenakee Springs. Residents of Tenakee Springs are especially concerned about potential disruptions to their way of life that could result from such activities. Several components that make up "way of life" have been grouped under the general heading of social values. Quality of life is subjective and not easily measured.

Some of the social value concerns that residents feel could disrupt their way of life include: interference with use of the East Tenakee Trail; noise and pollution from timber management activities and logging camps; changes in visual resource quality, recreational opportunities, and subsistence opportunities; reduced eco-tourist and outfitter/guide income; water quality and fisheries resource impacts on commercial fishing income; and potential impacts on heritage, karst, and cave resources.

The units of measure that will be analyzed for effects regarding this issue include acres by Recreation Opportunity Spectrum classification and Recreation Place, commercial recreation/tourism use and income, commercial fisheries income, subsistence measures (see Issue Area 1 above), degree of risk to heritage resources, and mapped karst vulnerability characteristics.

## Issue Area 7

### Alternatives to Traditional Clearcutting

During public scoping, it was suggested that a minimal amount of clearcutting be planned for the Indian River Project. Concern centered on clearcutting effects on old-growth fragmentation, fish and wildlife resources, and biodiversity. The focus of this issue is the impact of different silvicultural harvest systems on various forest resources.

The units of measure that will be analyzed for effects regarding this issue are harvest method by acres and harvest method by volume. (Note: habitat capability model results for deer were adjusted to reflect reduced impacts when using harvest methods other than traditional clearcutting.)



## Alternative Development

The action alternatives in this EIS were developed as site-specific proposals that could clearly display environmental consequences. Collectively, they explore ways to satisfy public concerns and resolve the issues discussed in Chapter 1 of the EIS, while responding to the purpose and need for the project. Each action alternative responds differently to the issues. This range of alternatives will give the Assistant Forest Supervisor a basis for making an informed decision.

Standards and guidelines in the modified 1997 Forest Plan, Alaska Regional Guide, and applicable Forest Service manuals and handbooks were followed in identifying a tentatively suitable land base, from which alternatives were developed. The tentatively suitable land base within the Project Area contains approximately 140 million board feet (mmbf) of timber.

In addition to complying with the above standards and guidelines, specific areas within the Project Area were avoided to provide further resource protection. These include:

- No harvest in Old-growth Land Use Designations (LUDs). This would also accommodate the concerns of Tenakee Springs residents regarding timber harvest effects on recreation and scenic quality in Tenakee Inlet.\*
- No harvest in the small Old-growth LUD located west of proposed Road #75007. This LUD is composed of a cedar plant community that is an underrepresented ecosystem in the Project Area.
- Avoid harvest in the Riparian Management Areas (RMAs). This would maintain riparian functions that affect water quality and wildlife habitat. (See the discussion of RMAs in the Soils, Water, and Fish sections of Chapters 3 and 4 of the EIS.)
- No harvest along Road #7502 in the area where VCUs 2221 and 2160 converge. This would maintain a wildlife corridor.

The first step in formulating alternatives was to develop a logging plan that identified a “pool” of timber harvest units and associated road systems from the tentatively suitable land base. The pool was examined in the field and reviewed by the Indian River Project Interdisciplinary Team (ID Team) before it was finalized. Harvest units were then selected from the pool and assigned to each of the alternatives.

The proposed harvest units were analyzed at two levels: the Northeast Chichagof landscape level and the stand level. The landscape level considered effects of management practices over large areas (such as VCUs, watersheds, or viewsheds). At this level, timber harvest was concentrated in certain areas, with large tracts of old-growth being left undisturbed in other areas. (See the landscape ecology section in Chapter 3 of the EIS for further discussion of landscape analysis.)

The stand level dealt with individual harvest units. The following concepts were considered during the selection and design of individual harvest units and roads, while assigning them to specific alternatives:

- Abrupt edges were reduced by unit placement and by feathering the edges of the units.
- In larger harvest units, the edge effect was minimized by using fringe and stream buffers for corridors between old-growth blocks.
- Stand diversity was provided by leaving snags in harvest units (where safety regulations allow), or by retaining small patches of uncut timber in harvest units where feasible and practical.



## Alternatives Considered In Detail

### Alternative A (No Action)

Alternative A represents the existing conditions in the Project Area, and serves as the baseline against which the effects of all other alternatives are measured. There would be no new resource outputs associated with this alternative. No road construction or timber harvest would occur. Additional receipts to the State of Alaska would be foregone, existing timber-related jobs would not be sustained, and no new opportunities for timber-related jobs would be created. Routine maintenance (such as culvert cleaning), tree thinning, and removal of unsafe bridges may continue.

### Alternative B (Proposed Action)

Alternative B is the Proposed Action as presented during public scoping. This alternative is intended to sustain levels of biodiversity and wildlife habitat by emphasizing uneven-aged management, and by maintaining wildlife travel corridors and lower elevation old-growth forest stands throughout the project.

The alternative proposes to harvest 23.6 mmbf of timber (sawlog and utility) on 1,821 acres. This figure differs from that published in the Notice of Intent (34.3 mmbf) due to more accurate volume-per-acre estimates and field-verified refinements to unit boundaries. There would be approximately 7.8 miles of new road construction and 22.3 miles of reconstruction.

The former LTF at Sunshine Cove (VCU 2200) would be reconstructed and a new LTF near the mouth of 10-Mile Creek (VCU 2210) would be constructed. Both LTFs would be drive-down ramps. A floating logging camp would likely be located at Corner Bay (across Tenakee Inlet). Log rafts from the 10-Mile Creek LTF would likely be stored at Seal Bay (also across Tenakee Inlet) due to lack of protection from wind and waves at the 10-Mile Creek site.

Mitigation measures such as retaining walls or anchored piers would be incorporated into the design of the 10-Mile Creek road accessing saltwater. These design measures would reduce the risk of slope failure and potential impacts to other resources.

Road Management Objectives (RMOs) for this alternative include keeping mainline roads open at Maintenance Level 2 (passable by high clearance vehicles), and closing temporary roads after use. Drainage structures would be removed. Roads 75004, 75012, 75003, 75007, 75021, and 7502 would be closed to vehicles.

### Alternative C

Alternative C reduces impacts on the community of Tenakee Springs by concentrating timber management activities in the Freshwater Creek and 10-Mile Creek drainages, and the upper portion of Indian River drainage. Harvest systems would include cable, helicopter, and shovel yarding systems. Some units are prescribed for uneven-age management.

The alternative proposes to harvest 28.3 mmbf of timber (sawlog and utility) on 1,781 acres. There would be approximately 9.1 miles of new road construction and 21.7 miles of reconstruction.

The former LTF at Sunshine Cove would be reconstructed as a drive-down ramp. A floating logging camp would likely be located at Corner Bay (across Tenakee Inlet).

RMOs for this alternative include keeping mainline roads open at Maintenance Level 2, for administrative use only. Temporary roads would be closed. Drainage structures would be removed on Roads 75004, 75012, 75007, 750071, 7508, 7501, 75021, 75028, and 7502. The LTF at Sunshine Cove could be removed and both gates on Road 7500 would be closed.

# Summary

## Alternative D

Alternative D reduces potential timber harvest impacts on the community of Tenakee Springs to a greater extent than Alternative C, by deferring most harvest activities in the Indian River watershed (VCU 2200). This alternative concentrates harvest in Freshwater and 10-Mile Creek drainages, with only one unit in the upper Indian River drainage. The resulting emphasis is on clear-cut harvest to improve economic efficiency. Harvest systems would include cable, helicopter, and shove yarding systems. Uneven-aged management would be utilized where necessary to maintain resource values.

The alternative proposes to harvest 23.4 mmbf of timber (sawlog and utility) on 1,513 acres. There would be approximately 9.1 miles of new road construction and 10.7 miles of reconstruction.

Alternative D utilizes a drive-down ramp LTF that would be built at the proposed 10-Mile Creek site. A floating logging camp and log storage area would likely be located at Seal Bay.

Mitigation measures such as retaining walls or anchored piers would be incorporated into the design of the 10-Mile Creek road accessing saltwater. These design measures would reduce the risk of slope failure and potential impacts to other resources.

RMOs for this alternative include closing all roads to motorized vehicles after harvest and maintaining all roads at Maintenance Level 1. Both gates on Road 7500 would be closed. All bridges would be removed in VCUs 2041, 2160, and 2221. In VCU 2200, unsafe log stringer bridges would either be removed or warning signs would be posted.

## Alternative E

Alternative E emphasizes maintenance of deer habitat. This would be accomplished by leaving large blocks of old-growth forest on the south-facing slopes in the Indian River drainage and the lower elevations at 10-Mile Creek above the estuary. Timber harvest would occur in all three drainages. Elements of landscape ecology (for example, maintaining large blocks of unfragmented old-growth, and considering patch size) are emphasized in the alternative design.

The alternative proposes to harvest 24.3 mmbf of timber (sawlog and utility) on 1,596 acres. There would be approximately 8.4 miles of new road construction and 21.6 miles of reconstruction.

The former LTF at Sunshine Cove would be reconstructed as a bulkhead to facilitate loading logs on barges. An upland camp would be located at Corner Bay.

RMOs for this alternative include closing all temporary roads, and removing all bridges in VCUs 2041, 2160, and 2221. The Sunshine Cove LTF bulkhead would be removed after the completion of timber harvest. Both gates would be closed on Road 7500; the road would be maintained at Level 2 for administrative (high clearance vehicle) traffic only. The remaining roads in VCU 2200 would be closed, with drainage structures removed.

## Alternative F

In Alternative F, harvesting would be concentrated in all three drainages (Indian River, Freshwater, and 10-Mile Creek) in the Project Area. The alternative emphasizes timber sale economic efficiency and receipts to Federal, State, and local governments utilizing cost efficient, ground-based yarding and harvest systems. Helicopter yarding systems would be used only where necessary. Uneven-aged management is utilized where necessary to maintain resource values.

The alternative proposes to harvest 36.6 mmbf of timber (sawlog and utility) on 2,261 acres. There would be approximately 9.6 miles of new road construction and 22.0 miles of reconstruction.

A new LTF (Sunny Too), approximately 1,000 feet west of the former LTF at Sunshine Cove, would be constructed as a bulkhead to facilitate barging. A floating logging camp would likely be located at Corner Bay.

RMOs for this alternative include closing all temporary roads, and removing all bridges in VCUs 2041, 2160, and 2221. The Sunny Too LTF bulkhead would be removed after completion of timber harvest. Only administrative (high clearance vehicle) traffic would be allowed on Road 7500 in VCU 2200. Recreational traffic would be discouraged on this road segment by closing both gates. On the newly built portions of Road 7500 in VCUs 2160 and 2041, drainage structures would be removed and the road placed in Maintenance Level 1. Drainage structures would be removed on Roads 7508, 750071, 75004, 75028, 75012, 75003, and 75007.

## Comparison of Alternatives by Identified Issue

The following sections compare the alternatives by identified issue, proposed activity, and environmental consequence. This comparison draws together conclusions from information presented throughout the EIS, and briefly summarizes analysis results. The no-action alternative (Alternative A) is the baseline for comparing. (See Tables S-1 and S-2 for numerical comparisons.)

### Issue Area 1

#### Subsistence

Concerns about potential impacts of further deer winter range reductions affecting subsistence deer hunting needs were evaluated. No significant possibility of a significant restriction to subsistence use was found for any Indian River Project alternative. Alternative E has the least potential effect (reduced habitat capability) on subsistence use of deer; Alternative F would have the highest effect.

However, considering cumulative effects, it is projected that there is a significant possibility in all alternatives (including the no-action alternative) of a significant restriction for subsistence use of deer. Over the short term (year 2010), this is due to the likelihood of a critical winter occurring on average once every 11 years, resulting in season and/or bag limitations. Over the long term (year 2095), this is due to demand that cannot be met from an ever increasing human population on a smaller supply of deer.

The area used by Tenakee Springs residents to harvest 90 percent of their deer would retain sufficient habitat capability to meet all current, local subsistence demand. This area, however, is unable to meet non-subsistence demands under all alternatives, including the no-action alternative. This indicates that there may be a need to restrict non-subsistence harvests of deer in the Tenakee Inlet area on a season-by-season basis.

### Issue Area 2

#### Fish Habitat and Water Quality

Maintaining stream buffers on all Class I and II streams, and Class III and IV streams as prescribed, along with avoiding Riparian Management Areas, will result in no significant direct, indirect, or cumulative effects on fish or water resources in all of the action alternatives.



## Issue Area 3

### Biodiversity and Wildlife

Direct and indirect effects on wildlife habitat for Management Indicator Species (MIS) would occur in all action alternatives as a result of timber harvest and road construction reducing wildlife habitat acreage. The estimated habitat loss for Sitka black-tailed deer ranges from 4 to 7 percent under the action alternatives. Effects are reduced to acceptable levels in all alternatives by maintaining old-growth habitat in non-development land use designations (28 percent of the Project Area is in Old-growth Habitat LUD), maintaining 1,000-foot beach and estuary fringes, maintaining stream buffers, maintaining a minimum of 5 percent canopy structure in all harvest units, and maintaining Riparian Management Areas. In addition, some portions of Timber Production and Modified Landscape LUDs would remain undeveloped, due to oversteepened slopes, unstable soils, and inability to access timber stands.

Since the majority of harvest would occur in old-growth habitat, habitat reductions are proportional to the acres harvested. Alternative F proposes to harvest the most acres, and results in the largest reduction. Alternative E harvests the least acres and would reduce old-growth habitat the least. Reductions in wildlife riparian habitat would also occur in all action alternatives, with Alternative F reducing the most and Alternative E reducing the least.

All action alternatives propose only limited harvest within wildlife travel corridors in the Project Area. Wildlife travel corridors are also maintained in the estuary and beach fringe buffers, RMA buffers, and by applying Road Management Objectives.

During the modified 1997 Forest Plan revision planning process, the Forest Plan team developed a network of old-growth Habitat Conservation Areas (HCAs) to address wildlife population and biodiversity. No harvest is allowed in these HCAs for this project.

Effects of the alternatives on old-growth patches were evaluated for this project. In all action alternatives, the greatest impact would be the fragmentation of large patches into smaller patches. The action alternatives would result in another decrease of five percent or less in the contiguous old-growth acres, across Northeast Chichagof Island.

In summary, it is unlikely that this project will have a major effect on biodiversity or wildlife species. This conclusion is based on analysis of the effects on habitat acre changes for Management Indicator Species; mitigation measures such as maintaining structure in harvest units; and analysis of old-growth patch distribution and size. Cumulatively, none of the alternatives differ significantly.

## Issue Area 4

### Log Transfer Facilities and Camp Location

Three log transfer facilities (LTFs) are considered in this project. Alternative B would have two LTFs: a new facility near the mouth of 10-Mile Creek and another at the former Sunshine Cove LTF site. Alternatives C and E would reconstruct the former Sunshine Cove LTF. Alternative D would use only a new site near the mouth of 10-Mile Creek. Alternative F proposes a new LTF in Sunshine Cove (labeled “Sunny Too”), located west of the former site. Use of either Sunshine Cove site would impact the use of East Tenakee Trail. Potential conflicts between pedestrian and logging traffic would occur during timber sale activities, which would normally occur between March and November for three to five years. Mitigation measures have been developed to reduce the potential conflict.

Use of the 10-Mile Creek LTF site in Alternatives B and D, and the Sunny Too site in Alternative F would conflict with the terms of the Memorandum of Understanding (MOU) with Tenakee Springs (see Appendix L). Use of the former LTF site in Sunshine Cove in Alternatives C and E would not conflict with the MOU.

All action alternatives assume that logging camps will be located outside the Project Area. In Alternatives B, C, E, and F, the timber purchaser would likely locate either a floating or a land-based logging camp in the Corner Bay area, which is south and across Tenakee Inlet from the Project Area. The floating camp location for Alternative D would likely be at Seal Bay, which is across the Inlet from the proposed LTF at 10-Mile Creek. All of these proposed camp locations meet the terms of the MOU with Tenakee Springs.

The proposed camp locations address the issues of noise pollution and disruption of community activities to Tenakee Springs' residents. Camp noise impacts would be minimal, if any. However, some noise pollution to Tenakee residents and visitors may be anticipated by any alternative using either of the Sunshine Cove LTFs.

Also, with the camps located away from the Project Area, there is less likelihood of competition for deer and marten (the prime source of hunting and trapping activities).

## Issue Area 5

### Economics

Implementation of an action alternative would create opportunities for an estimated 196 to 304 jobs over a four-year period. These jobs would generate approximately \$8.4 million (Alternative B) to \$13 million (Alternative F) in income. These figures represent both direct and indirect employment and income effects, and were calculated using the IMPLAN economic model. The City of Tenakee Springs would receive income for use of the Sunshine Cove tidelands. Income would be based on volume, user fees, and taxes, in accordance with a Memorandum of Understanding between the Forest Service and the City of Tenakee Springs.

A decline in recreation/tourism income in Tenakee Springs is likely in all action alternatives proposing an LTF in Sunshine Cove. This is due to potential visual and noise disturbances, and the possible lack of access to the Indian River Road during the hunting season. Alternative D, which proposes very little harvesting in the Indian River drainage and no LTF in Sunshine Cove, would have the least effect on recreation/tourism income.

For Alternative C, recreation/tourism income would likely return to pre-sale levels following timber harvest, since the lower drainage of Indian River would not be altered by harvesting timber. While Alternative B harvests timber throughout the Project Area, the alternative's emphasis on uneven-aged management would mitigate potential impacts. This would allow the area to recover quickly which, in turn, would allow for a more wildland recreation experience and resultant return of recreation/tourism income to pre-sale levels. Under Alternatives E and F, recreation/tourism income would not return to pre-sale levels as quickly as Alternative B, due to their emphasis on clearcut-with-retention harvest methods.

In all action alternatives, the noise from timber sale activities may decrease the ability of Tenakee Springs businesses and independent guides to provide a wildlands experience for tourists. The noise would impact portions of the Project Area during active timber harvest (March through November for three to five years).

Implementation of any of the alternatives is not expected to have any major direct, indirect, or cumulative impacts on the economics of the local communities and their residents. This is due largely to their dependence on commercial fishing and subsistence, rather than timber, as the primary factors influencing the communities.

## Issue Area 6

## Social Values

The social values issue has a number of facets. In the following discussion, each identified sub-issue is responded to separately, but many of them are intricately intertwined.

**Impacts to East Tenakee Trail Use.** Hikers walking the trail would expect to hear the noise of an active timber harvest, in action alternatives B, C, E, and F. The noise would originate from either LTF generators in Sunshine Cove, or truck traffic.

In all action alternatives, trail use could be disrupted during road reconstruction. Alternative D would have the least impact on trail users, because once the heavy equipment has passed through the area, this portion of road would no longer be used for this project. Alternative F would have the largest impact, because the trail would be moved and modified to accommodate construction of the Sunny Too LTF. In all action alternatives, the contractor would be required to maintain clear access to the East Tenakee Trail during sale operations.

**Impacts on the City of Tenakee Springs Residents and Visitors.** In all action alternatives, the direct effect of noise on Tenakee Springs would probably be minimal. A ridge system lies between the town and the main timber harvest areas. Harvest activities in Alternative D are at least eight miles from Sunshine Cove. Under the other action alternatives, harvest activities are three to six air miles from the town. The noise, however, may decrease the ability of Tenakee Springs' businesses and independent guides to provide a wildlands experience for tourists. The noise would impact portions of the Project Area during active timber harvest.

The Tidelands Memorandum of Understanding between the Forest Service and the City of Tenakee Springs stipulates that helicopters (used for harvest and personnel transport) would only be allowed a certain flight path in the timber sale area except in case of emergency. This provision would confine the helicopter noise to certain designated areas.

No alternative should affect the Project Area fish populations. Riparian Management Area prescriptions are expected to prevent any degradation to the aquatic resource.

No reduction in sport deer bag limit or season is expected as a result of this project.

All or most Indian River roads may not be available for recreation use during the sale due to possible conflicts with logging operations and LTF use. Alternative D would have the least impacts because the main Indian River drainage road would be available.

In Alternatives D, E and F, proposed RMOs would close all roads following completion of harvest. This would reduce the Indian River Road System Recreation Place by 81 percent.

Recreation activities by Tenakee Springs' residents and tourists would be disrupted to some extent during harvesting. Alternative D would have the least impact; Sunshine Cove LTF would only be used to off-load heavy equipment at the beginning of the project, and only one harvest unit would be taken from the Indian River drainage. Alternative F would have the most impact; it has the highest harvest volume, and would use a LTF in Sunshine Cove. Following harvest, recreation activities would take place in a more developed environment.

**Impacts to the 10-Mile Creek Area.** In Alternatives B and D, there would be noise and visual impacts at the 10-Mile Creek LTF site. Alternative B would have less effect than Alternative D, because less volume would be transported to the 10-Mile Creek LTF. Alternatives C, E, and F would not use this LTF site.



Log rafting and transporting may disrupt fishing at the 10-Mile Creek LTF during active timber harvest (three to five years). No saltwater habitat loss is anticipated.

In Alternatives B and D, the 10-Mile Recreation Place experience would change from Semi-Primitive Motorized (SPM) to Roaded Modified (RM). (See the Recreation sections in Chapters 3 and 4 for a full discussion of Recreation experiences.) The proposed RMOs for Alternative B would also add the 10-Mile Creek LTF development into the large, maintained Indian River Road System Recreation Place.

**Impacts to Karst Resources.** No degradation is expected to karst resources during or after harvesting and road building in any of the action alternatives. Recreational use of the resource may be curtailed during active timber harvesting, due to lack of road access.

**Impacts to Heritage Resources.** The East Tenakee Trail has been determined eligible for inclusion on the National Register of Historic Places. Only Alternative F impacts the trail. A determination of effect has been submitted to the State Historic Preservation Office (SHPO). A detailed mitigation plan would be developed in cooperation with Federal, State, and local governments if this alternative were selected.

**Impacts Caused by Logging Camps.** Forest Service contractor's compliance with State and Federal laws would address potential pollution problems from the logging camps and timber management activities. Tenakee Springs' concerns have been addressed by locating the camp away from the Project Area. The camp would likely be at Seal Bay in Alternative D, and at Corner Bay in all other action alternatives.

**Impacts to the Sunshine Cove Area.** Alternative D would have the least impact on recreational use of the Sunshine Cove shoreline because the cove would only be used for mobilization (unloading heavy equipment from barges at high tide onto the State of Alaska right-of-way easement to access the Indian River road). Of the alternatives that use a LTF in Sunshine Cove, Alternative B has the smallest timber volume and would also be using the 10-Mile Creek LTF. These two factors would limit the disruption of Sunshine Cove recreation use. Alternative F would have the highest impact to the non-National Forest shoreline; the new Sunny Too LTF would have a much larger visual impact than the former LTF, extending 200 feet into the cove and projecting 5 to 10 feet higher than the mean-high tide.

Both LTF sites at Sunshine Cove could displace private fishing guides for three to five years due to log rafting and transport. A small area (less than one acre) of tidal habitat would be filled for the LTF site.

**Impacts to the Overall Recreation Use of the National Forest System land in the Project Area.** In all cases, the area would change from providing a more wild experience to a more developed one. Alternative D would have the least impact on the existing recreation experience, with a 26 percent change in Semi-Primitive Non-Motorized ROS acres and a one percent change in Semi-Primitive Motorized acres. Roaded Modified ROS acreage would increase from 20 percent to 47 percent. Alternative F would have the most effect on the existing recreation experience.

The road system's inventoried recreation opportunities would be classified as Roaded Modified because of harvest-related disturbances. In Alternative D, the roads in the Indian River drainage would revert to a Roaded Natural or Semi-Primitive Motorized experience sooner than the rest of the Project Area because there would be no new disturbance in this entry.

During this entry, Alternative F would visually disturb the Project Area landscape the most and Alternative E the least. Alternative D would have the least visual disturbance in the immediate Indian River drainage.

Considering the cumulative effects of harvest and rehabilitation at LTFs, the Recreation Place ROS would remain Roaded Modified until the areas regain the qualities of a Roaded Natural experience. This would likely occur after approximately five years. Qualities of a Semi-Primitive Motorized experience would be regained after approximately ten years.

The existing Recreation Sites (Sunshine Cove anchorage, the beaver ponds area, dispersed camp sites in the 10-Mile Creek area, a cave, a trail leading to alpine on the Freshwater/10-Mile Pass) would not be disturbed in any alternative. Access to some sites could be impeded, however, depending upon the proposed RMOs. In Alternatives D, E and F, the proposed RMO would not maintain the road system for recreation traffic. The sites affected would be the cave and the trail.

## Issue Area 7

### Alternatives to Traditional Clearcutting

Traditionally, the term “clearcut” refers to the harvest method in which the entire timber stand within a unit is harvested. All clearcuts under this project would retain at least five percent of the stand, to comply with standards and guidelines. These units would therefore not truly be traditional clearcuts. However, in order to serve as a standard against which to compare alternative harvest methods, these clearcuts with green tree retention are referred to as traditional clearcuts for this project. Alternative B has the smallest number of acres (783) harvested by this method, and Alternative F has the largest number of acres (1,401). (See Table S-1.)

Using ground-based systems (shovel, cable, and tractor logging) for traditional clearcutting has provided the highest economic return. The use of helicopters for non-traditional harvesting (patch clearcuts and group selections) is very costly, and therefore would have a correspondingly lower economic return. Alternative F proposes a higher percentage of clearcut volume than the predominant partial harvest methods in Alternative B. Of the action alternatives, Alternative F would result in the greatest net stumpage value, most jobs, and the greatest increase in regional income.

There are also areas where, due to unstable ground or distance from the nearest road, helicopter logging is currently the only means available. This type of logging is less impactful to nearly all resources, but is more expensive than other methods. (See Table S-1.)



Table S-1  
Summary Comparison of Planned Actions, by Alternative

	Alt. B Proposed Action	Alt. C	Alt. D	Alt. E	Alt. F
<b>Volume, Acres, and Units</b>					
Sawlog Volume (mbf)	19,022	22,686	18,738	19,394	30,394
Sawlog and Utility Volume (mbf)	23,550	28,283	23,441	24,274	36,597
Sawlog and Utility Volume (ccf)	48,091	57,756	48,174	49,549	74,734
Harvested Acres	1,821	1,781	1,513	1,596	2,261
Number of Harvest Units	85	79	70	77	103
<b>Logging Systems by Acres</b>					
Cable	327	647	505	534	679
Cable/Helicopter*	63	121	58	89	121
Helicopter	1,403	923	866	918	1,325
Shovel	28	90	84	55	136
<b>Logging Systems by Volume (mbf)</b>					
Cable	5,531	11,945	9,605	9,791	13,245
Cable/Helicopter*	1,250	2,317	1,067	1,788	2,015
Helicopter	16,400	12,308	11,094	11,569	18,667
Shovel	369	1,713	1,675	1,126	2,670
<b>Harvest Method by Acres</b>					
Clearcut w/Green Tree Retention	783	1,116	934	1,066	1,401
Overstory Removal	310	186	151	159	244
Patch Clearcut	117	167	121	85	310
Group Selection	567	150	160	129	95
Single Tree Selection	44	162	147	157	211
<b>Harvest Method by Volume (mbf)</b>					
Clearcut w/Green Tree Retention	15,971	22,667	18,776	19,958	28,225
Overstory Removal	3,919	2,435	1,905	2,178	4,048
Patch Clearcut	813	1,435	1,047	433	2,151
Group Selection	2,405	538	596	501	381
Single Tree Selection	442	1,208	1,117	1,204	1,792
<b>Roads and Log Transfer Facilities</b>					
New Road Miles	7.8	9.1	9.1	8.4	9.6
Reconstructed Miles	22.3	21.7	10.7	21.6	22.0
Temporary Road Miles	2.1	3.69	3.15	3.29	4.32
Number of LTFs	2	1	1	1	1
<b>Bridges</b>					
Number of Existing Bridges Replaced	22	22	15	22	22
Number of New Bridges	7	7	6	7	7
<b>Log Transfer Facilities Location</b>					
Sunshine Cove	1	1	0	1	0
Sunny Too	0	0	0	0	1
10-Mile Creek	1	0	1	0	0
<b>Camp Location</b>					
Corner Bay - land-based camp	0	0	0	1	0
Corner Bay - float camp	1	1	0	0	1
Seal Bay - float camp	1	0	1	0	0
<b>Post Harvest Road Management Objectives</b>					
Mainline Roads Open	Yes	Yes **	--	Yes **	Yes **
Close All Roads	--	--	Yes	--	--
<b>Timber Economics</b>					
Average Annual Direct/Indirect No. of Jobs (over 4 yrs.)	49	59	49	50	76
Average Annual Wages -\$ millions (over 4 yrs.)	\$2.1	\$2.5	\$2.1	\$2.2	\$3.3

\* Most of unit is cable, but one or more settings are helicopter.

\*\* Open to administrative traffic only.

# Summary

Table S-2  
Summary Comparison: Effect on Resources, by Alternative

	Alt. A Existing Condition <sup>1</sup>	Alt. B Proposed Action	Alt. C	Alt. D	Alt. E	Alt. F
<b>Old-Growth % Remaining</b>	86.6	79.6	78.7	79.7	79.1	76.2
<b>Old-Growth Acres Remaining</b>						
Alpine/Subalpine	539	537	537	537	537	537
Brushfields	2,144	2,115	2,106	2,107	2,061	2,098
Colluvial/Fluvial/Coastal	2,234	2,071	1,978	1,971	2,043	1,935
Forested Hills	306	281	281	281	281	281
Lowland Wetland-Forest	1,132	1,123	1,117	1,121	1,110	1,114
Moderately Steep Forested Slopes	3,840	3,476	3,444	3,626	3,453	3,298
Steep Forested Slopes	5,873	5,165	5,130	5,141	5,184	4,867
<b>Wetlands Acres Affected</b>						
% Affected in Harvest Units	0.5	2.0	1.6	1.3	1.9	2.7
% Affected by Roads	0.5	0.7	0.8	0.8	0.8	0.8
<b>Wildlife Habitats: % of Habitat Affected</b>						
Beach Fringe	-21	-22	-21	-22	-21	-21
Estuary Fringe	-2	-2	-2	-2	-2	-2
Riparian	-30	-36	-37	-37	-34	-38
Old-Growth	-10	-20	-20	-18	-18	-22
Second-Growth	+1,230	+2,519	+2,486	+2,304	+2,209	+2,814
Alpine/Subalpine	0	0	0	0	0	0
<b>Wildlife Habitat</b>						
% Change in Suitable Habitat						
Sitka Black-tailed Deer	-10	-15	-16	-15	-14	-17
Brown Bear	-6	-10	-10	-10	-9	-11
River Otter	-32	-39	-40	-40	-37	-41
Marten	-13	-20	-21	-20	-20	-24
Red Squirrel	-8	-17	-17	-15	-15	-19
Brown Creeper	-23	-36	-35	-33	-32	-39
Red Breasted Sapsucker	-10	-23	-23	-21	-20	-26
Hairy Woodpecker	-17	-33	-32	-29	-29	-37
Bald Eagle	-37	-45	-46	-46	-43	-48
<b>Recreation Opportunity Spectrum</b>						
% of Acreage on National Forest Lands						
Semi-Primitive Non-Motorized	79	49	50	53	51	46
Semi-Primitive Motorized	1	0	1	0	1	1
Roaded Modified	20	51	49	47	48	53
<b>Recreation/Tourism Income</b>						
Average Annual Total Recreation/Tourism Income	\$739,250	\$726,382	\$726,382	\$739,250	\$726,382	\$726,382
<b>Fish/Water Quality</b>						
Total Road Miles in Stream Buffers	6.6	7.4	7.7	7.7	7.6	7.8
Number of Stream Crossings						
Class I/II	88	110	118	116	116	119
Class III	13	19	24	22	24	25
Total	101	129	142	138	140	144
<b>Heritage Resources</b>						
Impacts on Historic Property	No	No	No	No	No	Yes

<sup>1</sup> Alternative A reflects action taken from 1956 through 1996.

Table S-2 continued

**Summary Comparison: Effect on Resources, by Alternative**

	Alt. A Existing Condition <sup>1</sup>	Alt. B Proposed Action	Alt. C	Alt. D	Alt. E	Alt. F
<b>Subsistence Effects:</b> Project and (Cumulative) Effects	Significant Possibility of a Significant Restriction of Subsistence Use					
<b>Abundance or Distribution:</b>						
Deer	No (Yes) <sup>2</sup>	No (Yes) <sup>2</sup>	No (Yes) <sup>2</sup>	No (Yes) <sup>2</sup>	No (Yes) <sup>2</sup>	No (Yes) <sup>2</sup>
Brown Bear	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)
Furbearers	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)
Fish Resources	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)
Other Resources	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)
<b>Competition:</b>						
Deer	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)
Brown Bear	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)
Furbearers	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)
Fish Resources	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)
Other Resources	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)
<b>Access:</b>						
Deer	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)
Brown Bear	No (Yes)	No (Yes)	No (Yes)	No (Yes)	No (Yes)	No (Yes)
Furbearers	No (Yes)	No (Yes)	No (Yes)	No (Yes)	No (Yes)	No (Yes)
Fish Resources	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)
Other Resources	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)

<sup>1</sup> Alternative A reflects action taken from 1956 through 1996.

<sup>2</sup> Each column displays both project and (cumulative) potential for restrictions of subsistence use.

# Summary

## NOTES

# **Record of Decision**



# **RECORD OF DECISION**

## **Final Environmental Impact Statement Indian River Timber Sale(s)**

**USDA Forest Service  
Tongass National Forest  
Sitka and Hoonah Ranger Districts**

### **Decision to be Made**

This Record of Decision (ROD) documents my selection of the alternative that will make timber available from the Indian River Project Area. The Indian River Project Area is located in the Tongass National Forest, and is situated on the northern shore of Tenakee Inlet, on Chichagof Island (see Figure 1-1 in the Final EIS). The Project Area includes the major watersheds of 10-Mile Creek, Indian River, and portions of the Freshwater Creek and Game Creek drainages. The City of Tenakee Springs lies within the Project Area.

This decision is based upon the analysis and evaluations in the Indian River Timber Sale(s) Final Environmental Impact Statement (EIS). My decision includes the following:

- the volume of timber made available from this Project Area;
- the location of timber harvest units, road systems, and log transfer facilities (LTFs);
- mitigation measures and enhancement opportunities for sound resource management and;
- whether there may be a significant restriction on subsistence uses.

### **Decision**

It is my decision to select Alternative C with modifications, as described below, for implementation in the Indian River Project Area. This decision meets the purpose and need for the project; is consistent with the modified 1997 Tongass Land and Resource Management Plan; and is responsive to the issues raised during scoping and comments to the Draft EIS.

### **Selected Alternative**

The Selected Alternative for the Indian River Timber Sale(s) Project is described in this section of the ROD and is displayed in the accompanying ROD map. Specifically, my decision authorizes the following:

1. Timber will be harvested in this entry on approximately 1,559 acres of commercial forest land. I expect implementation to occur in two or more independent timber sales. The final decision on the number of sales will be made later during final timber sale preparation. This specified timber harvest will result in approximately 19.0 million board feet (38,940 hundred cubic feet [ccf]) of sawlog timber volume and 4.8 million board feet (9,759 ccf) of utility timber volume for a total of 23.8 million board feet (48,699 ccf). There will be 68 timber harvest units located in the Project area. The Selected Alternative includes a mixture of harvest methods to achieve vegetation and other resource objectives. Table 1 displays a summary of the specifications and expected outputs for the Selected Alternative.



Table 1  
Summary of Selected Alternative

<b>Volume, Acres, and Units</b>	
Sawlog Volume (mbf/ccf)	19,069 / 38,940
Sawlog and Utility (mbf/ccf)	23,848 / 48,699
Harvested Acres	1,559
Number of Harvest Unit	68
<b>Logging Systems by Acres</b>	
Cable	444
Cable/Helicopter*	75
Helicopter	1,024
Shovel	16
<b>Harvest Method by Acres</b>	
Clear-cut w/ Green Tree Retention	955
Overstory Removal	151
Patch Clear-cut	167
Group Selection	150
Single Tree Selection	136
<b>Harvest Method by Volume (mbf/ccf)</b>	
Clear-cut w/Green Tree Retention	18,960 / 38,718
Over-story Removal	1,905 / 3,890
Patch Clear-Cut	1,435 / 2,930
Group Selection	538 / 1,099
Single Tree Selection	1,010 / 2,062
<b>Roads and Log Transfer Facilities</b>	
New Road Miles	5.43
Reconstructed Miles	21.73
Temporary Road Miles	2.60
LTF and Location	Sunshine Cove
<b>Bridges</b>	
Number of Existing Bridges Replaced	22
Number of New Bridges	5
<b>Camp Location</b>	Corner Bay, land-based or floating camp
<b>Post Harvest Road Management Objectives</b>	
Mainline Roads Open**	Yes
Other Roads	Closed to motorized
<b>Timber Economics</b>	
Average Annual Direct/Indirect # of Jobs (over 4 yrs.)	49
Average Annual Wages – \$ millions (over 4 yrs.)	\$2.2
*Most of unit is cable, but one or more settings are helicopter	
**Open to all traffic	

Appendix A in this ROD lists each unit approved for harvest under the Selected Alternative. Timber harvest units are described on unit cards in Appendix J in the Final EIS. The Silvicultural Diagnosis and Prescriptions for each harvest unit are located in the Planning Record for the Indian River Timber Sale(s) Project EIS.

- Alternative C is modified by changing logging systems from cable, cable/helicopter, and shovel for units 62810, 62820, 62840, 62850, 62860, and 63110 to helicopter yarding; deferring harvest of units 61310, 61311, 61410, 61510, 62610, 62611, 62620, 62630, 62640, 62650, 62710, and 62730; and adding unit 1520.



3. Road construction will include 5.43 miles of new system road, reconstruction of 21.73 miles of existing road, and construction of 2.60 miles of temporary road in order to access the specified timber harvest units. Appendix B in this ROD lists Selected Alternative roads and their respective road management objectives (RMOs) for future management of the transportation system. RMOs are subject to periodic review and may be changed in response to changing conditions and management needs.

4. Planned road corridors for the Selected Alternative are displayed in Alternative C in the Final EIS, with the following exceptions:

Defer construction of Road 7500 and defer construction of Road 75007 past the intersection with Road 750071.

5. A log transfer facility (LTF) will be reconstructed at the former Sunny Cove LTF site in Sunshine Cove as displayed in Alternative C. The LTF will be a drive-down ramp. The Memorandum of Understanding (MOU) Between the City of Tenakee Springs and the USDA Forest Service for the Short Term Use of Tenakee Springs' tidelands at Sunny Cove (signed November 15, 1996), and its provisions and mitigation measures, will be in effect according to the terms of the MOU.

The LTF drive-down ramp rock fill and any other bulkheads will remain City of Tenakee Springs property after the MOU automatically terminates December 31, 2003. If the City decides to keep the facility in place, the opportunity exists to extend the MOU and use the site in conjunction with other City/Forest Service projects, such as timber salvage sales, road maintenance, fisheries enhancement, recreation development, and subsistence access.

6. Road Management Objectives (RMOs) for the Selected Alternative are adopted as displayed in Appendix D, Alternative C in the Final EIS, with the following exceptions:

Mainline roads will remain open at Maintenance Level 2 for administrative and incidental public use. The gates on Road 7500 will not be closed unless requested by the City Council for the City of Tenakee Springs. The Road Closure Final Order signed by Forest Supervisor Ken Roberts on November 6, 1986 will be rescinded. Road Closure Orders may be issued as necessary to protect resources, provide for public safety, or at the request of the Tenakee Springs City Council.

7. There will be no logging camps within the Project Area. Timber purchasers will likely locate a logging camp (either a floating or a land-based camp) in the Corner Bay area.
8. This Record of Decision identifies mitigation measures to reduce or eliminate adverse environmental effects of timber harvest and road construction activities specified in the Selected Alternative. It also specifies the implementation and effectiveness monitoring planned to determine how well resource management objectives have been met. In addition, the ROD identifies feasible enhancement opportunities following implementation of this alternative. These opportunities will be included in Sale Area Improvement Plan(s) developed for each timber sale. Mitigation measures, monitoring activities, and enhancement opportunities are the same as those applicable to all action alternatives, and are displayed in Appendix C in the Final EIS.
9. To proceed with the timber harvest as specified in the Selected Alternative, various permits and licenses must be obtained from other agencies. Administrative actions on

these permits may now take place. The agencies and their permit responsibilities are listed below.

### **U.S. Army Corps of Engineers**

- Approval of discharge of dredged or fill material into waters of the United States (Section 404 of the Clean Water Act of 1977, as amended).
- Approval of construction of structures or work in navigable waters of the United States (Section 10 of the Rivers and Harbors Act of 1899).

### **U.S. Environmental Protection Agency**

- National Pollutant Discharge Elimination Systems Review (Section 402 of the Clean Water Act).

### **State of Alaska, Department of Natural Resources**

- Authorization for occupancy and use of tidelands and submerged lands.
- Authorization for occupancy and use of State-owned uplands.

### **State of Alaska, Department of Environmental Conservation**

- Solid Waste Disposal Permit (Section 402 of the Clean Water Act).
- Certificate of Reasonable Assurance (Section 401 of the Clean Water Act), which certifies compliance with Alaska Water Quality Standards (Section 401 Certification).

10. Finally, I have determined that there is a significant possibility of a significant restriction on subsistence use of Sitka black-tailed deer in the Project Area for the City of Tenakee Springs and Hoonah. Implementation of the Selected Alternative by itself does not present a significant possibility of a significant restriction to subsistence use of deer, due to minimal effects of the project. However, there is a significant possibility of a significant restriction when the Selected Alternative, together with other past, present, and reasonably foreseeable actions are considered in a cumulative manner. Possible restrictions exist regardless of which alternative is implemented, including the No-Action Alternative, when the effects of weather are considered. A restriction on subsistence use of motor vehicles for hunting brown bears and trapping furbearers is currently in place.

As a result, I have determined that: (a) the potential restrictions of subsistence use are necessary, consistent with sound management of public lands; (b) the Selected Alternative involves the minimum amount of public land necessary to accomplish its purpose; and (c) reasonable measures to minimize impacts on subsistence uses and resources have been adopted to the maximum extent practicable while still meeting the purpose and need for this project.

## **Public Involvement**

Table 2 summarizes the public involvement process for the Indian River Timber Sale(s) Project. Table 3 summarizes collaborative stewardship activities with other agencies.

Table 2  
Public Involvement

November 1, 1995	Notice of Intent (NOI) to prepare an Environmental Impact Statement published in the Federal Register. Scoping document providing information and seeking public comment mailed to approximately 200 individuals and groups that had previously shown interest in Forest Service projects in Southeast Alaska. The mailing list included Federal and State agencies and divisions, Native and municipal offices, businesses, organizations, groups, and individuals.
November 2, 1995	Meeting with Hoonah Indian Association.
November 6, 1995	Legal advertisement to solicit scoping comments published in the <i>Daily Sitka Sentinel</i> .
November 7, 1995	Legal advertisement to solicit scoping comments published in <i>Juneau Empire</i> .
November 29, 1995	Scoping meeting in Tenakee Springs. Seven attendees from local public.
November 30, 1995	Scoping meeting in Hoonah. No attendees from local public.
December 8, 1995	Formal public scoping period closed. Nine letters received.
March 1996 – January 1997	Development of tidelands MOU with City Council of Tenakee Springs, LTF MOU Committee, and registered voter input.
April – July 1996	Personal interviews with residents of Tenakee Springs and private outfitters and guides.
May 7, 1996	Scoping meeting in Angoon. Seven attendees from local public.
April 18, 1997	Public meeting in Tenakee Springs for Finger Mountain Project. Twenty attendees from the local public.
September 27, 1997	Public meeting in Tenakee Springs for Finger Mountain Project. Twenty attendees from the local public.
November 28, 1997	Notice of Availability (NOA) for Draft EIS published in the Federal Register. Legal advertisement published in <i>Juneau Empire</i> and <i>Daily Sitka Sentinel</i> announcing the availability of the Draft EIS and soliciting public comments.
January 13, 1998	Open house and ANILCA Section 810 hearings held in Tenakee Springs. Twenty-one attendees from the local public; ten provided testimony.
January 20, 1998	End of Draft EIS public comment period. Seventy-five letters received.
June 23, 1998	Meeting with Tenakee Springs City Council members and the public. Twenty people attended.
November 28, 1998	Project status letter sent to the public and other interested parties. The letter stated that the project would be delayed due to the poor economic situation occurring at the time, and that a Final EIS and ROD would be released in 1999.



**Table 3**  
**Collaborative Stewardship Activities With Other Agencies**

1992 through 1995	ADF&G employee participated in ECOTeam landscape analysis for the Indian River Timber Sale(s) Project.
April 24 and 26, 1995	Army Corps of Engineers (ACOE) and the Environmental Protection Agency (EPA) invited to participate in this NEPA process as cooperating agencies. No response received.
February 1, 1996	ADF&G provided a package of Draft comments during the scoping period.
February 10, 1996	DEC provided issues and comments during the scoping period.
February 15, 1996	DGC documented that no other State agencies provided issues or comments during the scoping period.
February 28, 1996	Request to ADF&G for brown bear radio-tracking points.
March 5, 1996	Request to ADF&G for commercial fishing data from Tenakee Inlet.
March 7, 1996	Heritage Resource Results and Determinations of Eligibility sent to SHPO.
April 15, 1996	SHPO concurrence with Determinations of Eligibility submitted.
August 14, 1996	BLM consulted regarding land ownership in the Project Area.
August 19, 1996	BLM responded with the requested information.
November 29, 1996	NMFS concurrence with the Biological Assessment/Biological Evaluation for marine species.
December 17, 1996	USFWS concurrence that T&E species would not likely be adversely affected as a result of the proposed project.
March 18, 1997	Request to Alaska Department of Community and Regional Affairs for FY 1996 Federal distributions.
March 19, 1997	Request to Alaska Department of Education for number of students in area schools.
April 9, 1997	ACOE and EPA invited to participate in this NEPA process as cooperating agencies. No response received.
July 15, 1997	ADNR finding of effect for the Project. Alternatives A through E will have no effect. Alternative F will have an adverse effect.
September 23, 1997	Meeting with members of the interagency implementation team (USFWS, ADGC, ADEC, ADF&G).
September 30, 1997	Consultation with ADF&G to identify and manage important brown bear foraging sites in the Project Area.
October 10, 1997	Meeting with members of the interagency implementation team (NMFS and EPA).
November 21, 1997	Draft EIS sent to ACOE and EPA offices.
December 3, 1997	Indian River Watershed Analysis sent to ACOE. Request for T&E species list update from USFWS and NMFS.
December 17, 1997	NMFS response to December 3 request; no changes.
January 8, 1998	Copy of the voter information package for the MOU ordinance vote, Marine Resources Inventory, and dive report sent to DGC.
February 25, 1998	Meeting with ADF&G to discuss agency Draft EIS comments.
February 26, 1998	Meeting with ACOE to discuss agency Draft EIS comments.
March 24, 1998	ADGC concurs with USFS determination of consistency with ACMP.
April 1, 1998.	Meeting with USFWS to discuss agency Draft EIS comments.
April 6, 1998	Meeting with ADF&G to discuss agency Draft EIS comments.
April 20, 1998	Teleconference with EPA to discuss agency Draft EIS comments.
May 12, 1998	Copies of the unit pool delete/defer/add-on map sent to ADF&G, ADEC, ACOE, EPA, AND USFWS.
April 27, 1999	Requested and received a copy of the latest USFWS T&E species list; list included marine mammals managed by NMFS.

## Alternatives Considered

### Alternative A (No Action)

Alternative A represents the existing conditions in the Project Area, and serves as the baseline against which the effects of all other alternatives are measured. There would be no new resource outputs associated with this alternative. No road construction or timber harvest would occur. Additional receipts to the State of Alaska would be foregone, existing timber-related jobs would not be sustained, and no new opportunities for timber-related jobs would be created. Routine maintenance (such as culvert cleaning), tree thinning, and removal of unsafe bridges may continue.

### Alternative B (Proposed Action)

Alternative B was the Proposed Action presented during public scoping. This alternative is intended to sustain levels of biodiversity and wildlife habitat by emphasizing uneven-aged management, and by maintaining wildlife travel corridors and lower elevation old-growth forest stands throughout the project.

The alternative proposes to harvest 23.6 mmbf of timber (sawlog and utility) on 1,821 acres. This figure differs from that published in the Notice of Intent (34.3 mmbf) due to more accurate volume-per-acre estimates and field-verified refinements to unit boundaries. There would be approximately 7.8 miles of new road construction and 22.3 miles of reconstruction.

The former LTF at Sunshine Cove (VCU 2200) would be reconstructed and a new LTF near the mouth of 10-Mile Creek (VCU 2210) would be constructed. Both LTFs would be drive-down ramps. A floating logging camp would likely be located at Corner Bay (across Tenakee Inlet). Log rafts from the 10-Mile Creek LTF would likely be stored at Seal Bay (also across Tenakee Inlet) due to lack of protection from wind and waves at the 10-Mile Creek site.

Mitigation measures such as retaining walls or anchored piers would be incorporated into the design of the 10-Mile Creek road accessing saltwater. These design measures would reduce the risk of slope failure and potential impacts to other resources.

Road Management Objectives (RMOs) for this alternative include keeping mainline roads open at Maintenance Level 2 (passable by high clearance vehicles), and closing temporary roads after use. Drainage structures would be removed. Roads 75004, 75012, 75003, 75007, 75021, and 7502 would be closed to vehicles.

### Alternative C (Preferred Alternative)

Alternative C reduces impacts on the community of Tenakee Springs by concentrating timber management activities in the Freshwater Creek and 10-Mile Creek drainages, and the upper portion of Indian River drainage. Harvest systems would include cable, helicopter, and shovel yarding systems. Some units are prescribed for uneven-aged management.

The alternative proposes to harvest 28.3 mmbf of timber (sawlog and utility) on 1,781 acres. There would be approximately 9.1 miles of new road construction and 21.7 miles of reconstruction.

The former LTF at Sunshine Cove would be reconstructed as a drive-down ramp. A floating logging camp would likely be located at Corner Bay (across Tenakee Inlet).

RMOs for this alternative include keeping mainline roads open at Maintenance Level 2, for administrative use only. Temporary roads would be closed. Drainage structures would be removed on roads 75004, 75012, 75007, 750071, 7508, 7501, 75021, 75028, and 7502. The LTF at Sunshine Cove could be removed and both gates on Road 7500 would be closed.

### Alternative D

Alternative D reduces potential timber harvest impacts on the community of Tenakee Springs to a greater extent than Alternative C, by deferring most harvest activities in the Indian River watershed (VCU 2200). This alternative concentrates harvest in Freshwater and 10-Mile Creek drainages, with only one unit in the upper Indian River drainage. The resulting emphasis is on clear-cut harvest to improve economic efficiency. Harvest systems would include cable, helicopter, and shove yarding systems. Uneven-aged management would be utilized where necessary to maintain resource values.

The alternative proposes to harvest 23.4 mmbf of timber (sawlog and utility) on 1,513 acres. There would be approximately 9.1 miles of new road construction and 10.7 miles of reconstruction.

Alternative D utilizes a drive-down ramp LTF that would be built at the proposed 10-Mile Creek site. A floating logging camp and log storage area would likely be located at Seal Bay.

Mitigation measures such as retaining walls or anchored piers would be incorporated into the design of the 10-Mile Creek road accessing saltwater. These design measures would reduce the risk of slope failure and potential impacts to other resources.

RMOs for this alternative include closing all roads to motorized vehicles after harvest and maintaining all roads at Maintenance Level 1. Both gates on Road 7500 would be closed. All bridges would be removed in VCUs 2041, 2160, and 2221. In VCU 2200, unsafe log stringer bridges would either be removed or warning signs would be posted.

### Alternative E

Alternative E emphasizes maintenance of deer habitat. This would be accomplished by leaving large blocks of old-growth forest on the south-facing slopes in the Indian River drainage and the lower elevations at 10-Mile Creek above the estuary. Timber harvest would occur in all three drainages. Elements of Landscape Ecology (for example, maintaining large blocks of unfragmented old-growth, and considering patch size) are emphasized in the alternative design.

The alternative proposes to harvest 24.3 mmbf of timber (sawlog and utility) on 1,596 acres. There would be approximately 8.4 miles of new road construction and 21.6 miles of reconstruction.

The former LTF at Sunshine Cove would be reconstructed as a bulkhead to facilitate loading logs on barges. An upland camp would be located at Corner Bay.

RMOs for this alternative include closing all temporary roads, and removing all bridges in VCUs 2041, 2160, and 2221. The Sunshine Cove LTF bulkhead would be removed after the completion of timber harvest. Both gates would be closed on Road 7500; the road would be maintained at Level 2 for administrative (high clearance vehicle) traffic only. The remaining roads in VCU 2200 would be closed, with drainage structures removed.



## Alternative F

In Alternative F, harvesting would be concentrated in all three drainages (Indian River, Freshwater, and 10-Mile Creek) in the Project Area. The alternative emphasizes timber sale economic efficiency and receipts to Federal, State, and local governments, by utilizing cost-efficient, ground-based yarding and harvest systems. Helicopter yarding systems would be used only where necessary. Uneven-aged management is utilized where necessary to maintain resource values.

The alternative proposes to harvest 36.6 mmbf of timber (sawlog and utility) on 2,261 acres. There would be approximately 9.6 miles of new road construction and 22.0 miles of reconstruction.

A new LTF (Sunny Too), approximately 1,000 feet west of the former LTF at Sunshine Cove, would be constructed as a bulkhead to facilitate barging. A floating logging camp would likely be located at Corner Bay.

RMOs for this alternative include closing all temporary roads, and removing all bridges in VCU 2041, 2160, and 2221. The Sunny Too LTF bulkhead would be removed after completion of timber harvest. Only administrative (high clearance vehicle) traffic would be allowed on Road 7500 in VCU 2200. Recreational traffic would be discouraged on this road segment by closing both gates. On the newly built portions of Road 7500 in VCUs 2160 and 2041, drainage structures would be removed, and the road placed in Maintenance Level 1. Drainage structures would be removed on roads 7508, 750071, 75004, 75028, 75012, 75003, and 75007.

## Reasons for the Decision

In making my decision, I worked to ensure consideration of all issues and took into account the competing interests and values of the public. A beneficial mix of resources and uses for the public continues to be available with the Selected Alternative within the framework of the existing laws, regulations, policies, public needs and desires, and capabilities of the land, while meeting the stated purpose and need for the project.

My decision to implement this Selected Alternative is consistent with the Tongass Land and Resource Management Plan (modified 1997 TLRMP), Alaska Regional Guide, and sound National Forest management. I have considered the need to help maintain an adequate timber supply that meets the market demand for timber and provides employment in Southeast Alaska in support of community stability. I have also considered the need to provide strong protection measures for fish, wildlife, and other resources important to subsistence, recreation, commercial and other uses.

Harvest units 61310, 61311, 61410, and 61510 and associated Road 75007 are deferred in the Selected Alternative because of the lower quality of timber in the area, low timber volume for future entries, and high costs associated with building the road into the area.

Harvest units 62610, 62611, 62620, 62630, 62640, 62650, 62710, and 62730 and construction of associated new segment of Road 7500 are deferred. This segment of road was deferred because of concerns from residents of Tenakee Springs that off-road vehicles could access the Indian River road system from the Game Creek road system across the unroaded, relatively flat ground between the two road systems. By deferring road construction, there will be approximately 3.2 miles of unroaded terrain, including at least

one 50-foot V-notch and other smaller V-notches, to ensure that no off-road vehicles access the Indian River road system.

Log stringer bridges will be utilized wherever possible and practical, to reduce overall road construction and reconstruction costs. These bridges will be left in place after timber management activities have been completed wherever necessary to meet Road Management Objectives (RMOs). Other bridges that are not necessary to meet RMOs will be removed. Log stringers will not be obtained from TTRA buffers or other no-harvest areas.

Harvest unit 1520 is added to the Selected Alternative in response to requests from people commenting on the Draft EIS, because it can provide small timber sales opportunities in the Tenakee Springs area. This is the closest unit to the LTF site in Sunshine Cove (approximately 3 miles) and can be logged using a shovel logging system to improve economics. There are approximately 10.9 acres with 295 mbf of timber volume in the unit that can be harvested. It is my intent to offer multiple Special Salvage Timber Sales (SSTS) or Small Business Set-Aside Administration (SBA) Sales after the bridge and road work has been completed and a local infrastructure for the timber harvest established.

The cable logging system for units 62820, 62840, and 62850; the cable/helicopter logging system for units 62810 and 62860; and the shovel logging system for unit 63110 are all changed to helicopter logging because construction of a new segment of Road 7500 that would access the units has been deferred. Helicopter logging is the only other system available to remove logs from the harvest units.



## How Issues are Addressed

The following section summarizes the significant issues within the scope of the project and describes how the Selected Alternative addresses each of the significant issues.

### Issue Area 1: Subsistence

Concerns were raised about potential impacts of further deer winter range reductions affecting subsistence deer hunting. The Selected Alternative would result in no significant possibility of a significant restriction to subsistence use.

However, considering cumulative effects, it is projected that there is a significant possibility of a significant restriction for subsistence use of deer. Over the short term (year 2010), this is due to the likelihood of a critical winter. Critical winters occur on average once every 11 years, resulting in season and/or bag limitations. Over the long term (year 2095), the significant possibility of a significant restriction is due to demand that cannot be met from an ever increasing human population on a smaller supply of deer. The modified 1997 TLRMP 200-year rotation guideline will likely reduce deer habitat impacts over the long term, but to what degree is unknown at this time.

The area used by Tenakee Springs residents to harvest 90 percent of their deer would retain sufficient habitat capability to meet all current, local subsistence demand. In the future, however, this area may not meet non-subsistence demands under all alternatives, including the no-action alternative. This indicates that there may be a need to restrict non-subsistence harvests of deer in the Tenakee Inlet area on a season-by-season basis.

### Issue Area 2: Fish Habitat and Water Quality

Maintaining stream buffers on all Class I and II streams and the Class III and IV streams as prescribed, along with avoiding Riparian Management Areas (RMA), will result in no significant direct, indirect, or cumulative effects on fish or water resources in the Selected Alternative.

### Issue Area 3: Biodiversity and Wildlife

Direct and indirect effects on wildlife habitat for Management Indicator Species (MIS) will occur in the Selected Alternative as a result of timber harvest and road construction reducing wildlife habitat acreage. Negative effects have been reduced to acceptable levels by maintaining old-growth habitat in non-developmental land use designations (28 percent of the Project Area is in Old-growth Habitat LUD), maintaining 1,000-foot beach and estuary fringes, maintaining stream buffers and RMAs, and maintaining a minimum of 5 to 10 percent canopy structure in all harvest units. Impacts over the long term are reduced by implementing the 200-year rotation standard and guideline. In addition, some portions of Timber Production and Modified Landscape LUDs would remain undeveloped, due to oversteepened slopes, unstable soils, and inability to access timber stands.

The Selected Alternative will not have a direct, indirect, or cumulative effect on any Forest Service Alaska Region sensitive species in the Indian River Timber Sale(s) Project Area.

### Issue Area 4: Log Transfer Facilities and Camp Location

The Selected Alternative includes reconstruction of the former LTF in Sunshine Cove as a drive-down ramp. Use of this LTF site will impact the East Tenakee Trail. There could be conflicts between pedestrian and logging traffic during timber sale activities, which would normally occur between March and November for three to five years. Mitigation measures have been developed to reduce the potential conflict. The MOU with Tenakee Springs includes additional mitigation measures and stipulations that will be implemented to reduce impacts.

Logging camp(s) will be located outside the Project Area, most likely in the Corner Bay area. A Corner Bay logging camp location helps address the issues of noise pollution and disruption of community activities to residents of Tenakee Springs. Although the camp location across Tenakee Inlet will reduce noise levels, residents and visitors may still expect to occasionally hear evidence that the camp is present. Corner Bay logging camp residents are also less likely to compete for deer in the Project Area due to suitable hunting areas adjacent to the camp.

### Issue Area 5: Economics

Implementation of the Selected Alternative would create an opportunity for an estimated 197 jobs over a four-year period. These jobs would generate approximately \$8.4 million in income. The city of Tenakee Springs will receive income for use of the Sunshine Cove tidelands. Income will be based on volume, user fees, and taxes, in accordance with the MOU between the Forest Service and City of Tenakee Springs.

A decline in recreation/tourism income in Tenakee Springs is likely in the Selected Alternative. This is due to potential visual and noise disturbances near the Sunshine Cove LTF site, and possible lack of access to the Indian River road during the hunting season. Recreation/tourism income would likely return to pre-sale levels following harvest because the lower Indian River drainage would not be altered by harvesting timber.

Implementation of the Selected Alternative is not expected to have any major direct, indirect, or cumulative impacts on the economy of the local communities and their residents. This is due largely to their dependence on commercial fishing and subsistence, rather than timber, as the primary factors influencing the communities.

### Issue Area 6: Social Values

The social values issue has a number of facets. In the following summary, each identified sub-issue is responded to separately, but many of them are intricately intertwined.

**Impacts to East Tenakee Trail Use.** Noise originating from the Sunshine Cove LTF could disturb people expecting a wildland experience on the East Tenakee Trail in the vicinity of the LTF. Noise would be from generators and truck traffic.

In the Selected Alternative, trail use could be disrupted during road construction for short periods of time. The MOU with Tenakee Springs includes mitigation measures to be included in the construction contracts to maintain clear access to the trail, as well as other measures to ensure safety.

**Impacts on the City of Tenakee Springs Residents and Visitors.** The direct effect of noise on most of the residents of Tenakee Springs will be minimal. A ridge system lies between the town and the main timber harvest areas. Harvest activities are also at least six miles from Sunshine Cove. The noise that is heard, especially at the LTF site, may decrease the ability of Tenakee Springs' businesses and independent guides to provide a wildlands experience for tourists visiting the Project Area. The MOU with Tenakee Springs includes mitigation measures to reduce noise levels, such as confining helicopter flights to certain designated areas away from downtown and the LTF site (except in emergencies).

The Selected Alternative should have no measurable effects on Project Area subsistence and sport use of fish populations. Riparian Management Area prescriptions are expected to prevent degradation of the aquatic resource.

No reduction in sport deer bag or season is expected as a result of this project. Less than six percent of the deer habitat is expected to be impacted by timber management activities resulting from this project.

Most of the Indian River roads may not be available for recreation use during the sale due to possible conflicts with logging operations and LTF use. After timber harvest activities have been completed, the selected Road Management Objectives (RMOs) will be implemented. The RMOs selected for this project would allow use of only the mainline roads by motorized vehicles. All other roads and temporary roads would be closed to motorized vehicle use.

Recreation activities by residents of Tenakee Springs and visitors would be disrupted to some extent while harvest activities are underway. Following harvest, recreation activities will take place in a more developed environment.

**Impacts to the 10-Mile Creek Area.** The 10-Mile Creek LTF site will not be developed in the Selected Alternative and will not be developed as long as the MOU with Tenakee Springs is in effect. No saltwater habitat loss is anticipated.

**Impacts to Karst Resources.** No degradation of karst resources is expected as a result of timber management activities in the Project Area. All identified high vulnerability karst areas have been avoided and will be removed from the commercial forest lands suitable land base. Recreational use of the resource may be curtailed during active timber harvesting, due to lack of road access.

**Impacts to Heritage Resources.** The East Tenakee Trail has been determined eligible for inclusion on the National Register of Historic Places. The Selected Alternative does not impact the trail or any other known heritage resources.

**Impacts Caused by Logging Camps.** Concerns about logging camps, such as noise, pollution, and impacts to social values have been largely addressed by locating the camp away from the Project Area. The MOU with Tenakee Springs prohibits logging camps within the city boundary. Some concerns, such as noise, cannot be completely mitigated at all times.

The logging camp will likely be at Corner Bay, where logging camps have been located in the past. Forest Service contractor compliance with State and Federal laws addresses potential pollution problems.

**Impacts to the Sunshine Cove Area.** The Selected Alternative could displace private fishing guides in this location for three to five years during the time the LTF is in operation and logs are rafted. No saltwater habitat loss is anticipated.

**Impacts to the Overall Recreation Use of the National Forest System Land in the Project Area.** The Selected Alternative will change the area from a more wild experience to a more developed one. Recreation Opportunity Spectrum (ROS) percentage of Semi-primitive Non-motorized acres on National Forest System lands in the Project Area will decrease from 79 percent to 50 percent. The percentage of Road Modified acres will increase from 20 percent to 49 percent. The percentage of Semi-primitive Motorized ROS acres is not expected to change (less than or equal to 1 percent).

Existing Recreation Sites (Sunshine Cove anchorage, the beaver ponds area, dispersed camp sites in the 10-Mile Creek area, a cave, and a trail leading to alpine on the Freshwater/10-Mile Pass) will not be disturbed by timber management activities in the



Selected Alternative. Motorized vehicle access to some sites, such as the cave and alpine trail, may be impeded during active timber harvest activities due to safety concerns. After timber harvest activities have been completed, the RMOs for the Selected Alternative will allow motorized vehicle access.

### Issue Area 7: Alternatives to Traditional Clearcutting

The Selected Alternative provides for 485 acres (31 percent) and 3,280 mbf (6,698 ccf) volume (13 percent) of non-traditional uneven-aged harvest methods. There will be 1,074 acres (69 percent) and 20,568 mbf (42,001 ccf) volume (87 percent) of the traditional even-aged harvest methods in the Selected Alternative.

## Other Factors Considered

Some elements of my decision will result in higher costs and reduced return of revenue to the U.S. Treasury; however, there are benefits other than economics that need to be considered. These elements include:

- Leaving log stringer bridges in place and roads open for use by residents of Tenakee Springs will reduce revenue from log stringers not sold and will increase road maintenance costs.
- Implementing the MOU with the City of Tenakee Springs for use of the LTF site at Sunshine Cove will result in additional use rates and fees that will be the responsibility of the Timber Sale Purchaser. These added costs will be reflected in the bids submitted by potential timber sale purchasers. Use rates will be \$1.80 per thousand board feet (mbf) through calendar year 2000, then will increase \$0.10/mbf each year thereafter. Quarterly fees of \$1,250 will also be paid prior to occupancy of the City's tidelands. If all the timber volume is sold and goes through the LTF at Sunshine Cove, this will generate approximately \$45,000 for the City. If the LTF site is occupied nine out of twelve quarters from the year 2000 through 2003, an additional \$11,250 will be paid to the City. The benefit to the City of Tenakee Springs of these direct cash payments for use of their tidelands played a large role in my decision.

## Mitigation Measures

Mitigation measures applicable to the Selected Alternative include those contained in the Standards and Guidelines of the modified 1997 TLRMP, the Alaska Regional Guide, and applicable Forest Service Manual and Handbook policy and direction. These measures will minimize or negate many potentially adverse environmental effects from timber harvest and road construction. Water quality and fisheries habitat are protected through the application of Best Management Practices (BMPs) as stated in the Soil and Water Conservation Handbook (FSH 2509.22) and the direction contained in the Aquatic Habitat Management Handbook (FSH 2609.24). The Tongass Timber Reform Act (TTRA) requires a minimum 100-foot buffer for all Class I streams and for Class II streams directly flowing into Class I streams. The protection provided by 1,000-foot beach and estuary fringes, along with the stream buffers and other stream protection measures adopted in this decision, are equal to or exceed TTRA requirements and enforceable policies of the State of Alaska under the Coastal Zone Management Act (CZMA). In addition, terms of the Master Memorandum of Understanding and Supplemental Memorandum of Understanding No. 1 between the ADF&G and the Forest Service will be followed.



Resource management mitigation measures were applied in the development of all of the project action alternatives. Harvest units and road corridors were located to avoid, reduce, minimize, or eliminate the adverse effects of timber harvest actions to other resource uses and activities. The Mitigation Measures section of Chapter 2 of the Final EIS discusses those measures common to all alternatives. The adopted mitigation measures include all practicable means to avoid or minimize any environmental harm from the Selected Alternative (40 CFR 1505.2 (b)). The Final EIS includes harvest road cards and unit cards (Appendices I and J), which incorporate site-specific mitigation measures.

The Selected Alternative includes a number of measures to protect water quality and fish production. Class III and IV streams will be protected as necessary to prevent impact to fish habitat in Class I and II streams downstream, as well as to prevent sedimentation and soil erosion in the upper ends of watersheds. Mitigation measures and BMPs designed to protect water quality and fisheries habitat will likewise reduce impacts on forest soils. Soils with an extreme mass-wasting hazard rating have been avoided in the design of harvest units. In some areas, units will be partially harvested in order to avoid pockets of extreme hazard soils or oversteepened slopes and to maintain root strength integrity. Partial or full suspension of logs during yarding will be required in areas of units with high hazard soils. Trees will be felled away from V-notches and split yarding of V-notches will be required. Past experience indicates these measures are effective in protecting water quality and fish production.

Identified high vulnerability karst areas have been deleted from the harvest units. These areas will be removed from the commercial forest lands suitable land base. Some small portions of the Selected Alternative road system cross areas identified as high vulnerability karst. No other route or option was available and karst resource values will not be compromised. A cave in the Project Area has been designated "significant." As a result of this designation, specific information concerning the cave will not be made available to the public as required by the Federal Cave Resource Protection Act of 1988.

Units were located outside of the Old-growth Habitat land use designations and 1,000 foot beach and estuary fringe habitats, thereby reducing the potential to adversely impact high-value wildlife habitats.

Adverse impacts to wildlife will be minimized by implementing 200-year rotations; providing travel corridors, important brown bear foraging site buffers, and active raptor and great blue heron nest site buffers; implementing road management objectives; and providing reserve tree and cavity nesting habitat, and marten habitat components as identified on the road and unit cards in the Final EIS (Appendices I and J). All temporary roads are to be closed following the completion of sale activities, thus reducing the potential for wildlife encounters with people in motorized vehicles. These measures have been used effectively in the past throughout Southeast Alaska to mitigate effects on wildlife.

Those mitigation measures that conserve fish and game resources also generally serve to maintain the availability of subsistence resources. Road closures and regulatory control on how roads are used are mitigation measures that are currently in place to limit non-traditional subsistence use. The Alaska Department of Fish and Game or the Federal Subsistence Board can impose additional regulatory mitigation measures if warranted.

## Monitoring

Monitoring is the process by which the Forest Service can evaluate whether or not the resource management objectives of the Final EIS have been implemented as specified and whether or not the steps identified for mitigating the environmental effects are effective. Three levels of monitoring are recognized. The first two levels, implementation monitoring and effectiveness monitoring, are accomplished at the project level. The third level, validation monitoring, is conducted at the Forest-wide level and is generally not proposed in project-level planning. However, this decision includes validation monitoring of uneven-aged timber management activities to determine the effectiveness and feasibility of this silvicultural prescription.

Applicable monitoring requirements are specified in Appendix C of the Final EIS. For each monitoring item, an objective, desired result, method of measurement, threshold, and corrective action are identified, along with the parties responsible for doing the monitoring. Monitoring activities may reveal results that deviate from planned effects, in which case corrective actions are prescribed (40 CFR 1505.2(c)).

## Legislation Related to this EIS

The following laws, regulations, and executive orders are relevant to the preparation of this EIS. Some are specific to Alaska, while others pertain to all Federal lands.

Administrative Procedure Act, 1966  
Alaska Coastal Zone Management Act of 1977 (as amended)  
Alaska National Interest Lands Conservation Act (ANILCA) of 1980  
Alaska Native Allotment Act of 1906  
Alaska Native Claims Settlement Act (ANCSA) of 1971  
Archaeological Resource Protection Act of 1980  
Bald and Golden Eagle Protection Act, USC 668 (1940 as amended)  
Clean Air Act of 1970 (as amended)  
Clean Water Act of 1977 (as amended)  
Coastal Zone Management Act (CZMA) of 1976 (as amended)  
Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 CFR, Parts 1500-1508)  
Endangered Species Act of 1973 (as amended)  
Federal Cave Resource Protection Act of 1988  
Forest and Rangeland Renewable Resources Planning Act of 1974  
Marine Mammal Protection Act of 1972  
Multiple-Use Sustained Yield Act of 1960  
National Environmental Policy Act (NEPA) of 1969 (as amended)  
National Historic Preservation Act of 1966 (as amended)  
National Forest Management Act (NFMA) of 1976 (as amended)  
Native American Graves Protection and Repatriation Act of 1990  
Tongass Timber Reform Act (TTRA) of 1990  
Wild and Scenic Rivers Act of 1968  
Executive Order 11888 (floodplains)  
Executive Order 11990 (wetlands)  
Executive Order 12898 (environmental justice)  
Executive Order 12962 (recreational fisheries)

## Findings Required by Law

### National Forest Management Act

The National Forest Management Act (NFMA) requires that specific determinations be made in this Record of Decision, including consistency with existing Forest Plans and Regional Guides. It also requires a determination of clearcutting as the optimal method of harvesting and specific authorization of clear-cuts over 100 acres in size. These requirements are satisfied as follows:

**Tongass Land and Resource Management Plan, 1997 (modified 1999) and Alaska Regional Guide.** I have determined, through review of the analysis in the Final EIS for the Indian River Timber Sale(s) project, that the Selected Alternative incorporates all applicable management direction from the modified 1997 TLRMP and is fully consistent with its goals, objectives, Forest-wide standards and guidelines, and management area prescriptions as they apply to the Project Area.

**Clearcutting as the Optimal Method of Harvesting.** The Alaska Regional Guide established silvicultural and management standards for the western hemlock - Sitka spruce forest type (Alaska Regional Guide, page 3-18). Even-aged management in the form of clearcutting is, according to the Regional Guide, to be used where the management objective is to meet timber production objectives established in the modified 1997 Forest Plan, where there is a risk of dwarf mistletoe re-infection, and where risk of windthrow is determined to be high. While dwarf mistletoe is not a major problem within the Project Area, there are areas of high incidence. All of the harvest units being proposed for clearcut with green tree retention as a harvest method in the Selected Alternative have either a high level of decadence or disease, or a high risk of windthrow. Clearcutting with green tree retention will meet the objective of maintaining fast-growing, less disease infected stands of mixed species and is the optimum method of harvesting, considering the following factors referenced in the Alaska Regional Guide:

- Hemlock dwarf mistletoe (*Arcanthobium tsugense*), an important parasite of western hemlock, can best be controlled by clearcutting. Eliminating residual overstory trees infected with dwarf mistletoe prevents infection of western hemlock in the new stand.
- Risk of blowdown in residual stands is eliminated. The chance of blowdown along cutting boundaries is increased, but can be reduced through proper design of cutting units.

In addition to the direction in the Alaska Regional Guide, the Chief of the Forest Service established provisions in June 1992 for reducing clearcutting on National Forest System Lands. The provisions stated that clearcutting is to be limited to areas that involve at least one of seven specific circumstances. The clearcuts with reserves prescribed in the Indian River Project Area meet the following circumstances as specified in the 1992 direction:

- Provide for the establishment and growth of desired trees or other vegetative species that are shade intolerant.
- Preclude or minimize the occurrence of potentially adverse impacts or insect or disease infestations, windthrow, logging damage, or other factors affecting forest health.

**Clearcuts Over 100 Acres in Size.** The Selected Alternative does not include any units that create openings exceeding 100 acres.



## **Tongass Timber Reform Act**

Harvest units were designed and will be located to maintain a minimum 100-foot buffer zone for all Class I streams and Class II streams that flow directly into Class I streams, as required in Section 103 of the TTRA. The actual widths of these buffers will often be greater than the 100-foot minimum to help ensure a windfirm boundary or to protect fish habitat. The design and implementation direction for the Selected Alternative incorporates BMPs for protection of all stream classes.

A vehicular access road does not connect the Indian River and Game Creek roads, and none of the Project Area roads connect the City of Tenakee Springs with the logging road system on Chichagof Island, as required in Section 106 of the TTRA.

The long-term contract proportionality requirements in Section 301 of the TTRA are no longer applicable because timber volume from the Project Area will be made available as independent timber sale contracts.

## **Endangered Species Act**

The Selected Alternative will not have a direct, indirect, or cumulative effect on any threatened or endangered species in the Indian River Timber Sale(s) Project Area. A biological assessment has been completed and the U.S. Fish and Wildlife Service and the National Marine Fisheries Service have concurred with my determination that this action will not have any adverse impacts on any threatened or endangered species.

## **Bald and Golden Eagle Protection Act**

The Selected Alternative will not have a direct, indirect, or cumulative effect on any bald eagle or bald eagle nest tree.

Management activities within 330 feet of a bald eagle nest tree are restricted by a 1990 Memorandum of Understanding (MOU) between the Forest Service and the U.S. Fish and Wildlife Service to facilitate compliance with the Bald and Golden Eagle Protection Act. There are no variances from the MOU required for implementation of the Selected Alternative. If a nest tree is located in or near on-going timber management activities, the terms of the MOU will apply.

## **Clean Water Act**

The location of harvest units and roads for the Selected Alternative was guided by standards, guidelines, and direction contained in the modified 1997 Forest Plan, the Alaska Regional Guide, and applicable Forest Service Manual and Handbook policy and direction to ensure compliance with the Clean Water Act. The road and unit cards (Appendices I and J) contain specific details on practices prescribed to prevent or reduce non-point sediment sources. Implementation and site-specific application and monitoring of approved BMPs will comply with applicable State Water Quality Standards Regulations. These regulations provide for variances from anti-degradation requirements and water quality criteria. The road building and unit harvest operators will be responsible for compliance, including obtaining any variance required by the State, and will be monitored for compliance by the Forest Service. The Forest Service expects Indian River Timber Sale(s) project activities to fully qualify for any variance required by the State, according to the criteria in 18 AAC 70.015.



A monitoring plan to detect and evaluate possible effects of bark accumulations, oil sheens, and surface run-off will be implemented as a part of the permitting process for log transfer facilities (BMP 14.4 and FSH 2509.22).

### **National Historic Preservation Act**

Cultural resource surveys have been conducted in the Project Area. The State Historic Preservation Officer (SHPO) has been consulted, and the provisions of 36 CFR part 800 have been complied with. The SHPO has concurred with my determination that the East Tenakee Trail is eligible for listing to the National Register of Historic Places.

Timber sale contracts contain enforceable measures for protecting any undiscovered cultural resource that might be encountered during sale operations. All ground-disturbing activities associated with this action have received cultural resource clearance by the SHPO. Based on surveys conducted by professional archaeologists in the Project Area and clearance by SHPO, I have determined there will be no significant effects on cultural resources.

### **Federal Cave Resource Protection Act of 1988**

A cave in the Project Area has been determined to be significant and will be protected, as required by the FCRPA. I have determined that the actions in the Selected Alternative will not have direct, indirect, or cumulative effects on the significant cave in the Indian River Timber Sale(s) Project Area.

### **ANILCA Section 810 Subsistence Evaluation and Findings**

A subsistence evaluation was conducted for the six alternatives considered in detail in accordance with ANILCA Section 810. An open house meeting followed by an ANILCA Section 810 hearing was held in Tenakee Springs on January 13, 1998. During the hearing, subsistence concerns were expressed by people giving testimony.

The evaluation of the analysis, comments from the public, and subsistence hearing testimony indicate that the potential foreseeable effects from the action alternatives in the Indian River Timber Sale(s) Project Area do not indicate a significant possibility of a significant restriction of subsistence uses for marine mammals, waterfowl, salmon, other finfish, shellfish, other foods, such as berries and roots, and firewood. The analysis does conclude that there is a significant possibility of a significant restriction on subsistence use of Sitka black-tailed deer. The analysis also concludes that a significant restriction on subsistence use of brown bears and furbearers is currently in place in the form of restrictions on motorized land vehicle use while hunting bears or trapping furbearers on public land in Northeast Chichagof Island. The fall brown bear season has also been closed for a number of years.

Implementation of the Selected Alternative by itself does not present a significant possibility of a significant restriction to subsistence use of deer. The effects of the Selected Alternative on the subsistence use of deer are minor, with a reduction in acres of suitable habitat of six percent. However, there is a significant possibility of a significant restriction when the Selected Alternative, together with other past, present, and reasonably foreseeable actions are considered in a cumulative manner. This restriction exists regardless of which alternative is implemented, including the no-action Alternative.

A restriction on deer would be a result of (1) a decrease in habitat capability that could decrease the abundance or distribution of deer; (2) high deer mortality during severe

winters that occur periodically; (3) average yearly deer harvest levels exceeding what appears to be sustainable harvest levels; and (4) anticipated human population growth with the potential for an associated increase in subsistence hunter demand when compared to the habitat capability to produce deer. The effect of (1) above may be reduced over the long term by implementing the 200-year rotation standard and guideline (USDA 1999).

As noted above, the Federal Subsistence Board has already placed restrictions on brown bear hunting and furbearers trapping.

**Subsistence Determinations.** Section 810 of ANILCA requires that when a use, occupancy, or disposition of public lands would significantly restrict subsistence use, determinations must be made that (1) the significant restriction of subsistence use is necessary, consistent with sound management of public lands; (2) the proposed activity involves the minimum amount of public lands necessary to accomplish the purposes of the activity; and (3) reasonable steps will be taken to minimize adverse impacts on subsistence uses and subsistence resources resulting from the action.

**(1) Necessary, Consistent with Sound Management of Public Land.** The Selected Alternative has been examined to determine whether the associated potential restriction to subsistence use is necessary, consistent with the sound management of public lands. Standards used for the review included (1) the Multiple-Use Sustained Yield Act of 1960; (2) NFMA and its implementing regulations; (3) ANILCA; (4) the Alaska Regional Guide (1983); (5) modified 1997 TLRMP; (6) TTRA; (7) the Alaska State Forest Practices Act; (8) the Alaska Coastal Zone Management Program; (9) Subsistence Management and Use Handbook (1985); and (10) Subsistence Evaluation and Finding (FSH 2609.25).

ANILCA placed an emphasis on maintaining subsistence resources and lifestyles. The Act also emphasized providing adequate opportunity for satisfying the economic and social needs of the State of Alaska and its people, and required the Forest Service to make available for harvest 4.5 billion board feet of timber per decade from the Tongass National Forest. The TTRA removed the 4.5 billion board foot requirement from ANILCA, but directed the Forest Service to seek to meet market demand for timber to the extent consistent with providing for the multiple use and sustained yield of all renewable forest resources, subject to applicable law.

The potential restriction on subsistence priority resulting from the Selected Alternative is necessary as a component of the timber management program designed to implement the Forest Plan and to meet TTRA direction. There is currently a market demand for timber, a limited timber supply from other sources, and a growing sawmill capacity in the region. The Selected Alternative contributes to the Forest Service's actions to seek to meet market demand, while providing adequately for other resources and uses. This volume is provided as a component of the ten-year timber sale schedule, which attempts to provide timber to industry in an even flow over the planning cycle. The timber volume is also a substantial component of the timber sale program to be offered in the next five years from the Sitka Assistant Supervisor's Office to meet annual market demand. Timber volume from other areas of the Tongass National Forest is not available to replace this volume in a reasonable time frame.

Of the action alternatives, the Selected Alternative best meets the objectives of the Forest Plan and TTRA direction for timber harvests while also providing adequate protection measures for forest resources. It is consistent with the Forest Plan, laws, regulations, policies, public needs, and the capabilities of the land.

Based on a review of the subsistence hearing testimony and the analysis conducted in the Final EIS, it is apparent that all of the alternatives involve some potential impact to subsistence deer use in the future. There is no alternative that would meet modified 1997 TLRMP objectives and yet avoid a significant possibility of a subsistence restriction somewhere in the National Forest. Therefore, based on the analysis of the information presented in the Final EIS and this ROD, it is my determination that the potential restriction resulting from the Selected Alternative is necessary, consistent with sound management of public lands, and strikes the best balance between meeting the needs of the public and protecting forest resources.

**(2) Amount of Land Necessary to Accomplish the Purpose of the Activity.** The amount of public land involved to implement the Selected Alternative is (considering sound multiple-use management of public lands) the minimum necessary to accomplish the purpose of the Selected Alternative. The Indian River Project Area was selected to become part of the timber sale schedule because it is designated as a Timber Production land use designation in the modified 1997 TLRMP. The modified 1997 TLRMP designated 72.2 percent of the Project Area (LUD) to the Timber Production LUD, to be managed for the production of sawtimber and other wood products on an even-flow, long-term sustained yield basis. An additional 0.1 percent of the Project Area is allocated to the Modified Landscape LUD and will produce a yield of timber which contributes to the Forest-wide sustained yield. The remaining 27.7 percent of the Project Area is allocated to the Old-growth Habitat LUD. Forested areas in this LUD provide a diversity of old-growth habitat types and associated species and subspecies and ecological processes. Timber volume from the Old-growth Habitat LUD (such as salvage) does not contribute to the Forest-wide allowable sale quantity.

The Selected Alternative provides a sound location and design for all harvest units and roads. Given the framework and emphasis of the Selected Alternative, the minimum amount of land and roading was used to resolve resource concerns while meeting the purpose and need for the project in a practical and efficient manner. The Selected Alternative harvests 7.1 percent of the forested land within the Project Area. Resources were protected to the maximum extent practicable.

Choosing an alternative other than the Selected Alternative (including the no-action alternative) or locating the harvest somewhere else on the Tongass National Forest would not avoid or substantially reduce the risk to subsistence use in the future. Total projected future suitable habitat for deer is only expected to be reduced by less than 6 percent as a result of harvest from the Selected Alternative when compared to the no-action alternative. The risk to subsistence use in the future is primarily a result of (1) a decrease in habitat capability that could decrease the abundance or distribution of deer; (2) high deer mortality during severe winters that occur periodically; (3) average yearly deer harvest levels exceeding what appears to be sustainable harvest levels; and (4) anticipated human population growth with the potential for an associated increase in subsistence hunter demand when compared to the habitat capability to produce deer. Effect (1) may be reduced over the long-term by implementing the 200-year rotation standard and guideline (USDA 1999). Effects (2), (3), and (4) are independent of the Indian River Timber Sale(s) Project.

According to the Tongass Resource Use Cooperative Study, the entire Tongass National Forest is used by one or more rural communities for subsistence purposes for deer hunting and other subsistence uses. The areas of most subsistence use are the areas adjacent to existing road systems, beaches, and areas near communities. Much effort was taken to protect the highest value subsistence areas. For example, beach fringe is one of the most highly used subsistence areas; the Selected Alternative plans no timber harvest in the beach fringe. Areas further inland are important for sustaining populations of subsistence



resources, such as deer and marten; almost 28 percent of the Project Area is allocated to the Old-growth LUD to provide habitat for these and other subsistence resources.

Management activities cannot completely avoid these subsistence areas, due to their location and broad distribution across the Forest. Areas other than subsistence use areas that could be harvested may be limited by other resource concerns such as soil and water protection, high-value wildlife habitat, economics, scenic quality, or unit and road design. The impact of viable timber harvest projects always includes the alteration of old-growth habitat, which reduces the amount of suitable habitat for old-growth dependent species.

It is not possible to reduce harvest in one area and concentrate it in another without impacting one or more rural communities' important subsistence use areas. In addition, harvestable populations of game species could not be maintained in a natural distribution across the Forest if harvest were concentrated in specific areas. A well-distributed population of species is also required by the Forest Service regulations implementing the NFMA.

Therefore, it is my determination that the Selected Alternative involves the minimum amount of public land necessary and strikes the best balance between meeting the needs of the public and protecting Forest resources.

**(3) Reasonable Steps to Minimize Adverse Impacts Upon Subsistence Uses and Resources.** Considerable steps were taken to minimize the impacts to subsistence use and resources. The Selected Alternative reflects special efforts by the Forest Service to minimize the effects on resources used for subsistence by those rural communities that would most likely receive the highest priority in the event of an ANILCA section 804 "Tier II" restriction. Considerable effort was taken during the Indian River Project analysis to protect the highest value subsistence areas for deer. Most areas of high value and historic subsistence use are avoided in the Selected Alternative. The modified 1997 TLRMP standards and guidelines do not allow timber harvest units to be placed within the beach and estuary fringe or stream buffers, which are the areas of traditional use. In addition, the standards and guidelines increase rotation length from 100 years to 200 years in the Project Area. The affect of the Selected Alternative on subsistence uses, such as deer, by the rural communities that use the Indian River Project Area is minor (see above).

Another significant resource in the Project Area is salmon. Fish habitat is protected in the Selected Alternative through modified 1997 TLRMP requirements for application of BMPs and stream buffers. In addition to protecting fish habitat, these buffers protect estuarine and riparian habitat important to other species, such as deer, brown bear, and furbearers.

The Selected Alternative reflects a reasonable balance between projected need for Tongass National Forest timber from the Project Area to help meet modified 1997 TLRMP, ANILCA, and TTRA timber related employment objectives and the continued protection of subsistence uses and resources. Impacts on subsistence have been minimized through the development of the individual harvest units and road corridors and through the development of the Selected Alternative.

The Final EIS and this ROD describe the mitigation measures that will be implemented as a part of the Selected Alternative. Most of the mitigation measures are designed to maintain fish and wildlife habitat productivity at the highest level possible, while still maintaining a supply of timber.

A significant possibility of a significant restriction on the subsistence use of Sitka black-tailed deer is expected when the Selected Alternative is considered cumulatively with past,



present, and reasonable foreseeable actions. Significant restrictions on the subsistence use of brown bears and furbearers are currently in place in the form of restrictions on the use of motorized land vehicles. These restrictions are expected to remain in effect for the foreseeable future.

It is my determination that reasonable measures to minimize impacts on subsistence have been adopted to the maximum extent practicable while still meeting the purpose and need for this project.

### **Executive Order 11988 (Floodplains)**

Executive Order 11988 directs Federal agencies to take action to avoid, to the extent possible, the long- and short-term adverse impacts associated with occupying and modifying floodplains. The numerous streams in the Indian River Timber Sale(s) Project Area make it impossible to avoid all floodplains during timber harvest and road construction. The location of units chosen for the Selected Alternative and the application of Best Management Practices combine to minimize adverse impacts on floodplains.

### **Executive Order 11990 (Wetlands)**

Executive Order 11990 requires Federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with destroying or modifying wetlands. The Selected Alternative avoids most identified wetlands; however, many small wetlands or muskegs occur as inclusions within forested areas. These areas may be unavoidably altered by timber harvest or road construction; however, techniques and practices required by the Forest Service serve to maintain wetland attributes. The analysis displayed in the Final EIS indicates that there would only be minimal loss of wetlands with any of the alternatives. Soil moisture regimes and vegetation on some wetlands may be altered in some cases; however, these altered acres would still be classified as wetlands and function as wetlands in this ecosystem. I have determined that the Selected Alternative includes all practicable measures to minimize harm to wetlands that may result from timber management activities.

### **Executive Order 12898 (Environmental Justice)**

Executive Order 12898 directs Federal agencies to identify and address the issue of environmental justice, i.e., adverse human health and environmental effects of agency programs that disproportionately impact minority and low-income populations. The order specifically directs agencies to consider patterns of subsistence hunting and fishing when an agency action may affect fish or wildlife. The issue of environmental justice has been addressed through the Indian River NEPA analysis by identifying minority or low-income communities that may be affected by timber management activities; by ensuring that scoping and public involvement activities reach those communities; by evaluating the effects of the alternatives on such communities; and by documenting the analysis in this EIS. I have determined that this project does not have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.

### **Executive Order 12962 (Recreational Fisheries)**

Executive Order 12962 directs Federal agencies, to the extent permitted by law and where practicable, to improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities. Federal agencies are required to evaluate the effects of federally funded, permitted, or authorized actions on aquatic systems and recreational fisheries, and document those effects relative to the purpose of the order. Planning for the Indian River Timber Sale(s) Project included

# Record of Decision

documentation of existing recreational fisheries opportunities; protection of riparian, water quality, and fisheries habitats; and identification of fisheries enhancement opportunities. Harvest unit and road design are consistent with the standards and guidelines in the modified 1997 TLRMP. I have determined that there will be no significant effect to recreational fisheries.

## Coastal Zone Management Act

The Coastal Zone Management Act of 1976 (as amended) excludes Federal lands from the Coastal Zone. However, the Act requires that when Federal agencies conduct activities or undertake development, these actions be consistent to the maximum extent practicable with the approved State Coastal Management Program.

The Alaska Coastal Management Plan incorporated the Alaska Forest Resources and Practices Act of 1979 (as revised) as the applied standards and guidelines for timber harvesting and processing. The Forest Service standards and guidelines and mitigation measures described in Chapter 2 of the Final EIS are fully consistent with the State standards. In a letter dated March 24, 1998, the State of Alaska concurred with the Draft EIS finding that described activities are consistent with the ACMP to the greatest extent possible.

Based on the analysis in the Final EIS, review of the Alaska Forest Practices Act, and comments from the State agencies on the Draft EIS, the Selected Alternative is consistent to the maximum extent practicable with the enforceable policies of the Alaska Coastal Management Plan.

## Implementation of this Decision

Implementation of this decision may occur no sooner than 50 days from the date of publication of the notice of this decision in the *Juneau Empire*, the official newspaper of record.

This project will be implemented in two or more independent timber sales in accordance with Forest Service Manual and Handbook direction for Timber Sale Project Implementation, contained in FSM 2430 and FSH 2409.24. This direction provides a bridge between project planning and implementation, and will ensure execution of the actions, environmental standards, and mitigations approved by this decision, and compliance with TTRA and other applicable laws.

Implementation of all activities authorized by this Record of Decision will be monitored to ensure that they are carried out as planned and described in the Final EIS, ROD, and planned unit and road cards, unless they are modified consistent with direction in FSM 2430 and FSH 2409.24.

Appendices I and J in the Final EIS contain the planned road and unit cards. These cards are an integral part of this decision because they summarize the specific resource concerns, management objectives and mitigation measures to govern the layout of the harvest units and the general location and construction of roads. The road and unit cards, along with the integrated silviculture prescriptions, will be used during the implementation process to ensure that all aspects of the project are implemented within applicable standards and guidelines and that resource impacts will not be greater than those described in the EIS. Similar cards will be used to document any changes to the planned layout as the actual layout and harvest of the units occurs. The implementation record for this project will

display each harvest unit, transportation facility, and other project components as actually implemented; any proposed changes to the design, location, standards and guidelines, or other mitigation measures for the Project; and the decisions on the proposed changes.

Proposed changes to the authorized project actions will be subject to the requirements of NEPA, NFMA, Section 810 of ANILCA, TTRA, CZMA, and other laws concerning such changes. In determining whether and what kind of NEPA action is required, the Assistant Forest Supervisor will consider the criteria for whether to supplement an existing EIS in 40 CFR 1502.9(c) and FSH 1909.15, sec. 18. In particular, the Assistant Forest Supervisor will consider whether the proposed change is a substantial change to the Selected Alternative as planned and already approved, and whether the change is relevant to environmental concerns. Connected or interrelated proposed changes regarding particular areas or specific activities will be considered together in making this determination. The cumulative impacts of these changes will also be considered.

The intent of field verification is to confirm inventory data and to determine the feasibility and general design and location of a unit or road, not to locate the final boundaries or road locations. Minor changes are expected during implementation to better meet on-site resource management and protection objectives. Minor adjustments to unit boundaries are also likely during final layout for the purpose of improving logging systems efficiency. This will usually entail adjusting the boundary to coincide with logical logging setting boundaries. Many of these minor changes will not present sufficient potential impacts to require any specific documentation or action to comply with applicable laws. Some minor changes may still require appropriate analysis and documentation to comply with FSH 1909.15, section 18.

## Right to Appeal

This decision is subject to administrative review (appeal) pursuant to 36 CFR part 215. A written notice of appeal must be filed with the Appeal Deciding Officer:

Regional Forester  
USDA Forest Service, Region 10  
P.O. Box 021628  
Juneau, AK 99802-1628

The Notice of Appeal must be filed within forty-five (45) days of publication of the notice of this decision in the *Juneau Empire*.

In accordance with 36 CFR part 215.14, it is the responsibility of those who appeal a decision to provide the Appeal Decision Officer sufficient evidence and rationale to show why the Responsible Official's decision should be remanded or reversed. The written notice of appeal filed must meet the following requirements:

1. State the document is a Notice of Appeal filed pursuant to 36 CFR part 215;
2. List the name, address, and telephone number of appellant;
3. Identify the decision document by title and subject, date of the decision, and name and title of the Responsible Official;

## Record of Decision

4. Identify the specific change(s) in the decision that the appellant seeks or portion of the decision to which the appellant objects;
5. State how the Responsible Official's decision fails to consider comments previously provided, either before or during the comment period specified in 36 CFR 215.6 and, if applicable, how the appellant believes the decision violates law, regulation, or policy.

The first independent timber sale is planned to be made available as part of the current timber supply in the year 2000. Implementation of this action can begin five (5) business days from the close of the 45-day appeal filing period. An appeal of this decision would evoke a stay of implementation of the Selected Alternative until fifteen (15) days after the appeal decision.

### Contact Person

For additional information concerning the specific activities authorized with this decision, contact the Indian River Timber Sale(s) Planning Team:

Linn Shipley  
Indian River Timber Sale(s) Planning Team  
Tongass National Forest  
204 Siginaka Way  
Sitka, AK 99835

(907) 747-6671

e-mail address: lshipley/r10\_chatham@fs.fed.us



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FRED S. SALINAS  
Assistant Forest Supervisor

September 29, 1999  
Date



# Appendices



# **Appendix A**

## **Harvest Units Specific to the Selected Alternative**





## Indian River Timber Sale Selected Alternative

Units	Acres	Harvest Method	Silvicultural Treatment	Percent Harvest (Volume)	Harvest Volume (MBF)
1520	10.9	Shovel	Clearcut w/Green Tree Retention	0.95	295
2810	13.6	Cable	Clearcut w/Green Tree Retention	0.95	273
2820	58.4	Helicopter	Clearcut w/Green Tree Retention	0.95	1219
3112	4.6	Cable	Clearcut w/Green Tree Retention	0.90	72
3112	17.8	Cable	Clearcut w/Green Tree Retention	0.95	293
3221	4.4	Cable	Clearcut w/Green Tree Retention	0.90	113
3221	28.6	Cable	Clearcut w/Green Tree Retention	0.95	775
3222	46.9	Cable	Patch Clearcut	0.35	388
3520	15.8	Cable/Helicopter	Clearcut w/Green Tree retention	0.90	283
3520	15.1	Cable/Helicopter	Clearcut w/Green Tree retention	0.95	285
3530	32.3	Cable/Helicopter	Clearcut w/Green Tree Retention	0.95	682
3610	4.7	Cable	Clearcut w/Green Tree Retention	0.90	92
3610	21.0	Cable	Clearcut w/Green Tree Retention	0.95	434
4011	5.2	Shovel	Single Tree Selection	0.20	38
4012	9.2	Helicopter	Single Tree Selection	0.20	53
4120	58.2	Helicopter	Clearcut w/Green Tree Retention	0.95	1010
20510	16.6	Helicopter	Clearcut w/Green Tree Retention	0.95	254
20610	13.7	Helicopter	Overstory Removal	0.80	190
20710	10.7	Cable	Single Tree Selection	0.50	43
20810	21.8	Helicopter	Overstory Removal	0.70	246
20812	4.6	Helicopter	Overstory Removal	0.70	59
20910	8.5	Helicopter	Patch Clearcut	0.50	56
21010	8.2	Cable	Clearcut w/Green Tree Retention	0.90	213
21010	7.9	Cable	Clearcut w/Green Tree Retention	0.95	218
21410	25.1	Helicopter	Patch Clearcut	0.35	254
21420	25.0	Helicopter	Patch Clearcut	0.35	253
21511	17.6	Cable	Clearcut w/Green Tree Retention	0.95	483
21520	23.5	Helicopter	Clearcut w/Green Tree Retention	0.95	645
21610	12.3	Helicopter	Single Tree Selection	0.40	136
21820	51.9	Cable	Clearcut w/Green Tree Retention	0.95	976
21840	43.0	Helicopter	Clearcut w/Green Tree Retention	0.95	1048
21910	11.7	Helicopter	Clearcut w/Green Tree Retention	0.95	201
22010	26.0	Helicopter	Overstory Removal	0.50	229
22110	14.2	Helicopter	Single Tree Selection	0.40	103
22120	26.4	Helicopter	Single Tree Selection	0.40	217
22130	20.5	Helicopter	Clearcut w/Green Tree Retention	0.95	356
22140	57.5	Helicopter	Single Tree Selection	0.40	420
22210	22.1	Helicopter	Clearcut w/Green Tree Retention	0.95	416
22230	3.5	Helicopter	Clearcut w/Green Tree Retention	0.95	74
60420	22.1	Cable	Clearcut w/Green Tree Retention	0.95	700
60710	58.8	Helicopter	Group Selection	0.20	247
60810	4.5	Helicopter	Clearcut w/Green Tree Retention	0.95	120
60910	10.5	Helicopter	Clearcut w/Green Tree Retention	0.95	79
61011	18.4	Helicopter	Patch Clearcut	0.40	165
61012	9.7	Helicopter	Patch Clearcut	0.40	73
61020	26.3	Helicopter	Group Selection	0.20	98
61030	16.0	Cable	Clearcut w/Green Tree Retention	0.90	333

**Indian River Timber Sale  
Selected Alternative**

<b>Units</b>	<b>Acres</b>	<b>Harvest Method</b>	<b>Silvicultural Treatment</b>	<b>Percent Harvest (Volume)</b>	<b>Harvest Volume (MBF)</b>
61030	18.9	Cable	Clearcut w/Green Tree Retention	0.95	417
61040	8.6	Helicopter	Overstory Removal	0.70	109
62810	1.8	Helicopter	Clearcut w/Green Tree Retention	0.90	28
62810	30.3	Helicopter	Clearcut w/Green Tree Retention	0.95	501
62820	14.2	Helicopter	Patch Clearcut	0.40	103
62840	5.5	Helicopter	Clearcut w/Green Tree Retention	0.95	95
62850	19.6	Helicopter	Patch Clearcut	0.40	143
62860	1.0	Helicopter	Clearcut w/Green Tree Retention	0.90	17
62860	12.7	Helicopter	Clearcut w/Green Tree Retention	0.95	219
63110	11.1	Helicopter	Clearcut w/Green Tree Retention	0.90	182
63110	4.7	Helicopter	Clearcut w/Green Tree Retention	0.95	80
63120	9.4	Helicopter	Overstory Removal	0.80	137
63510	18.8	Cable	Clearcut w/Green Tree Removal	0.95	324
63520	6.2	Cable	Overstory Removal	0.50	68
63820	50.5	Helicopter	Clearcut w/Green Tree Retention	0.95	832
63850	38.7	Helicopter	Clearcut w/Green Tree Retention	0.95	935
63920	14.1	Helicopter	Clearcut w/Green Tree Retention	0.95	244
63960	12.3	Cable	Clearcut w/Green Tree Retention	0.95	198
63970	12.7	Cable	Clearcut w/Green Tree Retention	0.95	270
63971	11.9	Cable/Helicopter	Clearcut w/Green Tree Retention	0.95	302
64010	12.4	Cable	Clearcut w/Green Tree Retention	0.95	206
64020	64.5	Helicopter	Group Selection	0.20	193
64110	0.4	Helicopter	Clearcut w/Green Tree Retention	0.90	6
64110	20.5	Helicopter	Clearcut w/Green Tree Retention	0.95	299
64210	28.3	Helicopter	Overstory Removal	0.80	390
64410	23.4	Cable	Clearcut w/Green Tree Retention	0.95	404
64420	9.4	Helicopter	Clearcut w/Green Tree Retention	0.95	164
64510	32.8	Helicopter	Overstory Removal	0.80	477
64530	0.4	Helicopter	Clearcut w/Green Tree Retention	0.90	6
64530	2.9	Helicopter	Clearcut w/Green Tree Retention	0.95	45
65013	8.4	Helicopter	Clearcut w/Green Tree Retention	0.90	159
65013	4.3	Helicopter	Clearcut w/Green Tree Retention	0.95	91
65020	28.0	Cable	Clearcut w/Green Tree Retention	0.90	430
65020	34.8	Cable	Clearcut w/Green Tree Retention	0.95	564
<b>Total</b>	<b>1,558.8</b>			<b>Total</b>	<b>23,848</b>

# **Appendix B**

## **Road Management Objectives (RMOs)**





# Road Management Objectives

## Road Management Definitions and Terminology used in RMO Summary Tables

### Road Status

- **E:** Existing road.
- **E(R):** Existing road, scheduled for reconstruction.
- **P:** Proposed for construction.

**Service Life** (The length of time a facility is expected to provide a specified service.)

- **Long-term:** Service life of at least ten years.
- **Intermittent:** Operated for periodic service, and closed for more than one year between periods of use.

**Service Level** (Based on significant traffic characteristics and operating conditions for a road. Reflects factors such as speed, travel time, traffic interruptions, freedom to maneuver, safety, driver comfort, convenience, and operating costs.)

- **C:** Traffic flow is slowed by road condition. Traffic volumes are frequently controlled as the capacity is reached. Accommodates mixed traffic (all vehicle types). Meets minimum safety requirements. Topographic features generally dictate alignment. Travel efficiency is traded for lower construction costs. Road surface may not be stable under all traffic or weather conditions during the normal use season.
- **D:** Traffic flow is slow or may be blocked by an activity. Traffic volumes are intermittent and usually controlled; volume is limited to that associated with the single purpose (e.g., timber harvest). Not designed for mixed traffic. Need for safety protection is minimized by slow speeds and strict traffic controls. Alignment is dictated by topography. Road surface is rough and irregular.

**Functional Classification** (The way in which a road services land and resource management needs and the character of service it provides.)

- **A:** Arterial road. Provides service to large land areas and usually connects with other arterial roads or public highways. (Due to the remoteness of the Indian River Timber Sale(s) Project Area, and the fact that the road systems planned for the area are small and not interconnected, no roads are classified as arterials.)
- **C:** Collector road. Serves smaller land areas than an arterial road. Usually connects arterial roads to local roads or terminal facilities.
- **L:** Local road. Connects terminal facilities with other local, collector, or arterial roads, and public highways. Usually local roads are for a single purpose, such as timber harvest.

**Post-harvest Maintenance Level** (Defines the level of service provided by, and maintenance required for, a specific road after harvest.)

- **Level 1:** Normally assigned to intermittent service roads during the time they are closed to vehicular traffic. In the Indian River Timber Sale(s) RMO summary tables, this level also applies to short-term roads after the purpose for which they were constructed is completed. At this level, drainage structures are removed, the roadbed is waterbarred, and basic custodial maintenance is performed to keep damage to adjacent resources at an acceptable level and to perpetuate the road to facilitate future management activities.
- **Level 2:** Assigned to roads needed by high clearance vehicles between periods of harvest. Planned post-harvest vehicle traffic in the Indian River Timber Sale(s) Project Area is expected to be either high clearance vehicles (HCV) or all-terrain vehicles (ATV), to accomplish administrative and recreation access objectives. Roads will be logged out and brushed as necessary to provide passage for ATVs. The road prism will be maintained to provide for passage of high clearance vehicles. Barricades will be placed at the entrance of each road maintained at this level, for ATV access, to effectively block vehicles greater than 50" in width.

**Post Harvest Access Needs and Traffic Strategies:**

**1) Future Commercial Timber Volume** (Is there additional timber that this road accesses for which it will be needed in the future?)

- **Yes:** Additional timber exists for which this road will be needed in the future.
- **No:** No additional timber exists for which this road will be needed in the future.

**2) Silviculture/Administration** (Access needed to perform administration or post-sale silviculture practices, and method of access.)

- **HCV:** High clearance vehicle, pickup-type 4-wheel drive.
- **ATV:** All terrain vehicle, smaller 4-wheel or motorcycle.

**3) Post-harvest Public/Recreation Traffic Strategies** (Describes methods employed on forest development roads to control traffic. Used to prevent damage to the roadway, to abate unsafe traffic conditions, or to control use to meet other specific management direction such as protecting wildlife habitat or achieving semi-primitive recreation objectives.)

- **Encourage:** Encourage public use by means of appropriate signing, public notification, and active maintenance of the road prism.
- **Accept:** Public use is allowed but not encouraged, while road is maintained for administrative access.
- **Discourage:** Public access is discouraged by means of allowing alder growth at road entrance, non-removal of blowdown, or road prism deterioration within acceptable environmental limits. Road may also be signed to discourage use. Example: "Not Maintained for Public Traffic."
- **Eliminate:** Road is physically blocked after sale traffic. Where prescribed for long-term intermittent roads, this strategy is achieved by means of placement of impassable barricades at road entrances. On short-term roads, removal of drainage structures effectively blocks traffic.
- **Prohibit:** Public access is prohibited by a road order (i.e., CFR closure). Implementation of this strategy on remote road systems such as the Indian River Timber Sale(s) Project Area may require the installation of gates, in addition to public notification and appropriate signing.

**Post-harvest Resource Concerns** (Specific road management concerns noted by resource specialists during planning process. See Road Cards in Appendix I of the Final EIS, for mitigation measures related to concerns.)

- **Hydrology/Soils**
- **Wildlife**
- **Subsistence**
- **Fish and fish habitat**

**Indian River Timber Sale(s)  
Road Management Objectives  
Selected Alternative**

VCU	ROAD NUMBER	ROAD MILES	ROAD STATUS	SERVICE LIFE	SERVICE LEVEL	FUNCT. CLASS	POST-HARVEST MAINT. LEVEL	POST-HARVEST ACCESS NEEDS/TRAFFIC STRATEGIES				POST - HARVEST RESOURCE CONCERNS (SEE ROAD CARDS)			
								FUTURE COMML. VOL.	SILVIC/ ADMIN	PUBLIC/ RECREATION	HYDRO/ SOILS	W/L	SUB-SIS.	FISH	
2160	7500	4.97	E	INTERMITTENT	C	C	2	YES	HCV	DISCOURAGE			X		
2160	7502	1.82	E	INTERMITTENT	D	C	2	YES	HCV	DISCOURAGE					
2160	7507	0.08	E	SHORT-TERM	D	L	1	NO		DISCOURAGE					
2160	75021	0.22	E	SHORT-TERM	D	L	1	NO		DISCOURAGE	X				
2160	7508	1.02	P	INTERMITTENT	D	L	1	YES	ATV	DISCOURAGE				X	
2160	75007	0.31	P	SHORT-TERM	D	L	1	NO		DISCOURAGE	X				
2160	75021	0.54	P	SHORT-TERM	D	L	1	NO		DISCOURAGE	X				
2160	750071	0.99	P	SHORT-TERM	D	L	1	NO		DISCOURAGE	X				
2200	7500	9.61	E	INTERMITTENT	C	C	2	YES	HCV	DISCOURAGE	X	X	X		
2200	7501	0.61	E	INTERMITTENT	D	L	1	YES	ATV	DISCOURAGE	X			X	
2200	75004	0.60	E	INTERMITTENT	D	L	1	NO		DISCOURAGE	X			X	
2200	75012	0.18	E	SHORT-TERM	D	L	1	YES	ATV	DISCOURAGE				X	
2200	7501	0.94	P	SHORT-TERM	D	L	1	YES	ATV	DISCOURAGE					
2200	75004	0.56	P	SHORT-TERM	D	L	1	NO		DISCOURAGE					
2221	7502	3.52	E	INTERMITTENT	D	C	2	YES	HCV	DISCOURAGE				X	
2221	75028	0.12	E	SHORT-TERM	D	L	1	NO		DISCOURAGE				X	
2221	7502	0.27	P	SHORT-TERM	D	L	1	YES	ATV	DISCOURAGE	X				
2221	75028	0.80	P	SHORT-TERM	D	L	1	NO		DISCOURAGE	X			X	
	Total miles	27.16													







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